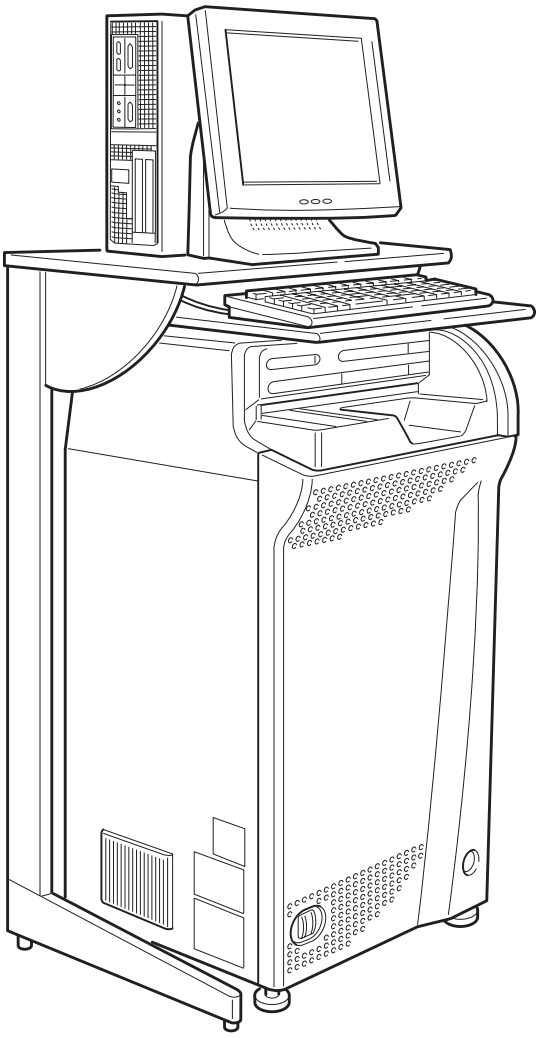
FUJIFILM

FCR XG-1

(CR-IR346RU)

Operation Manual

Third Edition: September 2001



Fuji Photo Film Co., Ltd.

010-021-20 09.2001

Foreword

Thank you for purchasing the FUJIFILM FCR XG-1.
The FUJI Computed Radiography FCR XG-1 performs Digital Radiography by using an Imaging Plate (IP) as the X-ray detection device. It reads and processes X-ray image information that is recorded on an exposed IP using a cassette-type X-ray stand and can also print out hard copies on film.

The "FUJIFILM FCR XG-1 Operation Manual" (this manual, hereinafter) describes in detail operation methods and usage precautions so that FCR XG-1 functions can be used correctly and more efficiently.
First-time users of this system should first read this manual thoroughly and then store it near the device and refer to it regularly for optimum use of the system.

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Maintenance and Inspection

Chapter **1**

Introduction

1.1 Features of the FUJIFILM FCR XG-1

The FUJI Computed Radiography System FCR XG-1 performs Digital Radiography by using an Imaging Plate (IP) as the X-ray detection device. It reads and processes X-ray image information that is recorded on an IP exposed using a cassette-type X-ray stand and can also print out hard copies on film using the connected image recorder.

This system provides chest, abdomen, bone, spine, head and other plain X-ray imaging, as well as spinal canal, bronchial tube, urinary organ, and other contrast medium X-ray imaging and X-ray tomography.

1 Due to the effects of digital image processing, the system produces radiographs that have a high diagnostic value and are easy to observe.

2 The system has a wide latitude for incident X-rays so that a large amount of X-ray diagnostic information is obtained.

3 The system has high sensitivity, resulting in a decrease in the X-ray radiation dose to the patients.

4 As the system has a wide latitude and an automatic sensitivity adjustment function, its radiographs are not affected by small changes in X-ray exposure conditions. Therefore, consistent image density is obtained for all radiographs.

5 Exposure information items that include patient's data, anatomical regions and exposure menus can be selected at the CR Console.

6 The automatic feed/load mechanism results in more efficient operation.

7 DICOM output and connection to the FCR Data Management System (Optical Disc Image Filing Unit, CRT Image Console) are possible via the CR Console.

1.2 Operational Precautions

1.2.1 Laser Handling Precautions

CR-IR346RU Laser Unit Specifications	
Class	IIIb
Medium	Semiconductor laser
Wavelength	660 nm
Maximum Output	50 mW (CW)

WARNING: The CR-IR346RU incorporates a Class IIIb laser with maximum output of 50mW. To prevent exposure to its laser beams, observe the following precautions.
- Never open or remove the protective covers.
- Always contact a qualified service engineer immediately if you suspect there is a malfunction.

CAUTION: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

1.2.2 Preventing Electric Shock

WARNING: High voltage is supplied to the photomultiplier.
To prevent electric shock, please observe the following precaution.
- Never remove the protective covers from the unit.

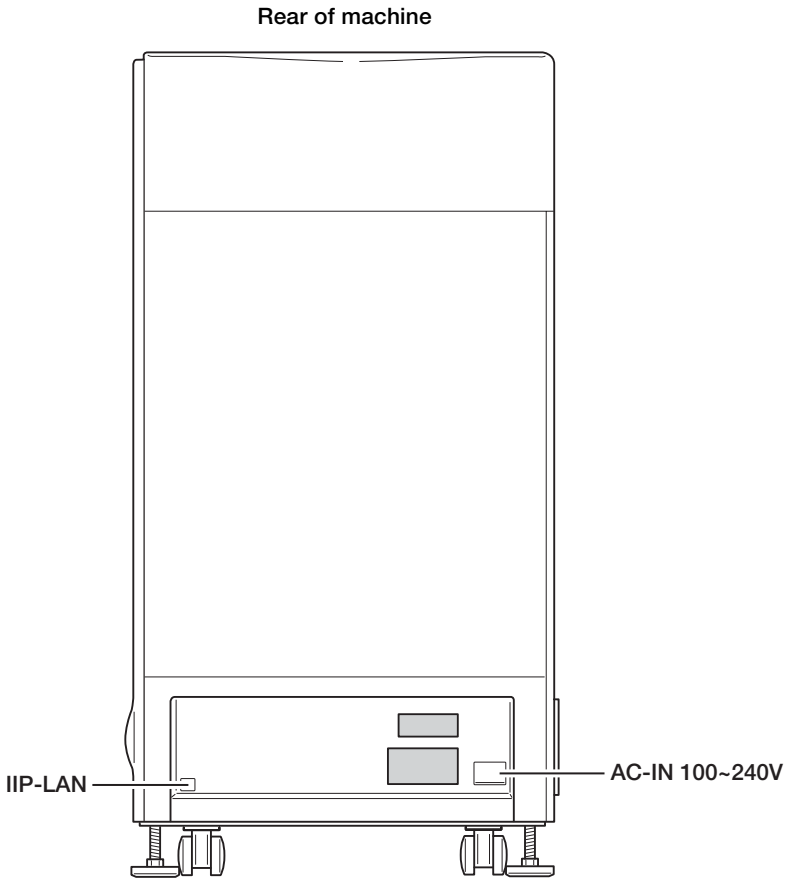
WARNING: The power supply to the unit is AC 100-120 / 200-240 V. To prevent electric shock, please observe the following precautions.
- Avoid installation sites where the equipment will be exposed to water.
- Always ground the equipment to a protective earth line.
- Make sure that all connections are secure and connected correctly.

1.2.3 Electromagnetic Compatibility (EMC)

The CR-IR346RU system complies with the standards for EMC that are applied in various countries as follows.
- IEC60601-1-2: 1993 (Japan)
- FCC Rules Part 15, Class A (USA)
- EN60601-1-2 (Europe)

WARNING: Electromagnetic wave-sensitive parts, such as the FDD, HDD, photo-multiplier, etc., are used in this equipment.
Do not place any objects that emit strong electromagnetic waves near the equipment.

1.2.4 Signal Input and Output Parts



CR-IR 346CL-LAN : Connected to the image and ID network devices.
10base-T/100base-TX interface

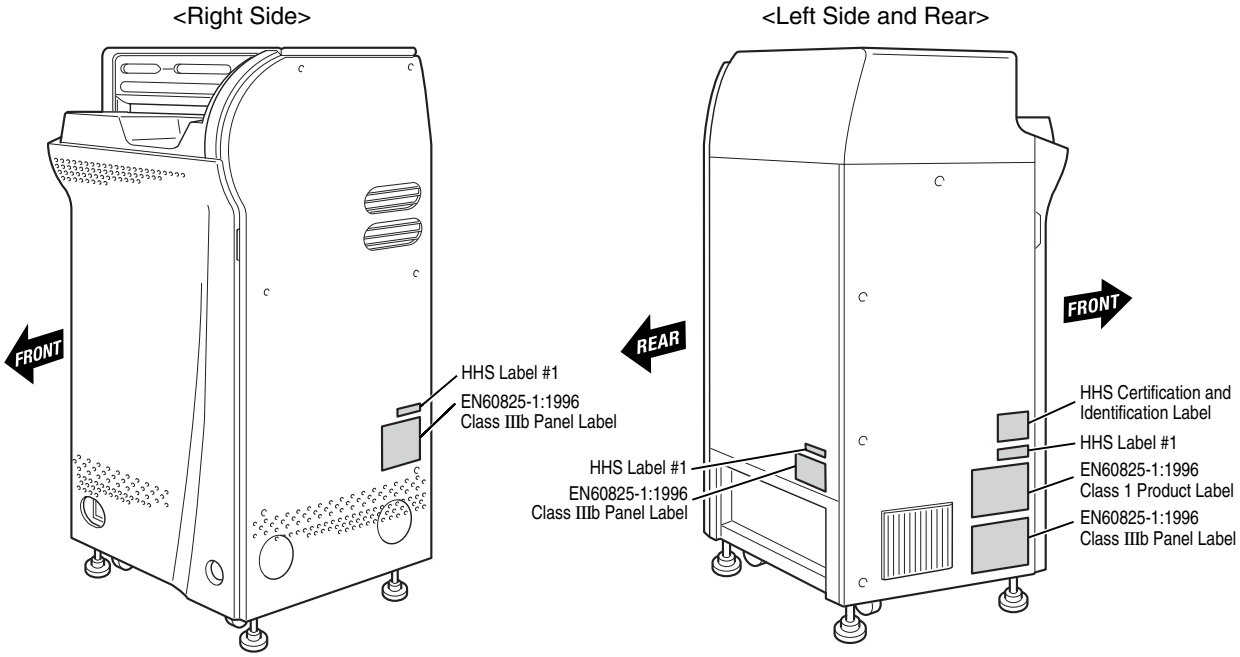
* Service engineers take responsibility for connections of these devices.

1.2.5 Usage Precautions

We ask that you heed these usage precautions and use the equipment correctly.

1. This equipment should be used only by people who have the proper skills.
2. Heed the following precautions when installing the equipment.
  2-1. Install the equipment where water will not splash it.
  2-2. Install the equipment where it will not be adversely affected by air pressure, temperature, humidity, ventilation, sunlight, dust or the presence of salt, sulfur or like substances in the atmosphere.
  2-3. Make sure the equipment will remain in stable condition, kept level and not subjected to vibration or shock.
  2-4. Do not install the equipment in places where chemicals are stored or gases emitted.
  2-5. Make sure that the power frequency, voltage and power consumption are appropriate.
  2-6. Connect the ground wire correctly.
3. Observe the following precautions before beginning to use the device.
  3-1. Inspect the switch contacts, polarities, dial settings and meters and confirm that the equipment is functioning properly.
  3-2. Confirm that the ground wire has been completely connected.
  3-3. Make sure that all cords have been connected properly and safely.
  3-4. Be aware that correct diagnosis can be hindered and danger can result from using different pieces of equipment together .
4. Heed the following precautions after using the equipment.
  4-1. Using the established procedure, restore the operation switches, dials, etc., to what they were prior to use and then turn the power off.
  4-2. When unplugging cords, do not pull on the body of the cord itself or apply unnecessary force.
  4-3. After using the accessories, recollect them and put them back in order.
5. If there is trouble with the equipment, do not attempt to fix it randomly. Instead, do what is indicated and entrust repairs to a professional.
6. Do not remodel the equipment.
7. Maintenance and Inspection
  7-1. Make inspect the equipment and parts periodically.
  7-2. If the equipment has not been used for a long time, make sure that it operates normally and safely prior to using it again.
8. Other Items
  8-1. When subjecting patients (particularly infants and pregnant women) to radiation, make sure not to exceed the necessary time and dose. Also, ensure that radiation is contained within the region for exposure.
  8-2. For cleaning and disinfecting the parts that patients come in contact with in a normal usage environment, slightly moisten a soft cloth (non-woven cloth: Kimwipe®) in neutral detergent or ethanol anhydride and wipe away any dirt. Do not use any other cleansers or disinfectants. Also, do not scrub the equipment's surface vigorously.
  8-3. Follow the Operation Manual and operate the equipment correctly.

1.2.6 Location of HHS Labels



FUJI PHOTO FILM CO., LTD.
26-30, NISHIAZABU 2-CHOME, MINATO-KU,
TOKYO 106-8620, JAPAN

MODEL	CR-IR 346RU
SERIAL No.	3462001
MANUFACTURED	AUGUST,2000

FPE

This product complies with
21 CFR Chapter 1. Subchapter J.

HHS Certification and Identification Label

DANGER
Laser radiation when open
AVOID DIRECT EXPOSURE TO BEAM

HHS Label #1

注意 — ここを開くとレーザ光が出ます。
ビームを直接見たり、触れたりしないでください。
CAUTION — LASER RADIATION WHEN OPEN
AVOID EXPOSURE TO BEAM.
VORSICHT! — LASERSTRAHLUNG.
WENN ABDECKUNG GEÖFFNET
NICHT DEM STRAHL AUSSETZEN.
ATTENTION — RAYONNEMENT LASER EN CAS
D'OUVERTURE
EXPOSITION DANGEREUSE AU FAISCEAU.
ATTENZIONE — RAGGIO LASER IN CASO DI
APERTURA NON ESPORSI AL RAGGIO.
PRECAUCION — RADIACION LASER EN CASO DE APERTURA
EVITAR LA EXPOSICION A LOS RAYOS.
OBSERVERA — LASERSTRÅLNING OM ÖPPNAD
UNDVIK ATT UTSÄTTA DIG FÖR STRÅLEN.
FORSIGTIG — LASERUDSTRÅLING VED ÅBNING
UNDGÅ UDSÆTTELSE FOR STRÅLEN.
ADVARSEL — LASERSTRÅLER UTGÅR HVIS ÅPNES
UNGÅ EKSPONERING AV STRÅLEN.
주의 — 이곳을 열면 레이저 광선이 나옵니다.
빔을 직접 보거나 접촉하지 마십시오.

EN60825-1:1996
Class IIIb Panel Label

クラス 1 レーザ製品
CLASS 1 LASER PRODUCT
LASER KLASSE 1
APPAREIL A LASER DE CLASSE 1
PRODOTTO LASER DI CLASSE 1
PRODUCTO LASER DE CLASE 1
KLASS 1 LASERPRODUKT
KLASSE 1 LASERPRODUKT
클래스 1 레이저 제품
EN60825-1:1996

EN60825-1:1996
Class 1 Product Label

1.3 Safety Precautions

This section contains safety precautions required for the safe operation of this equipment. Carefully read and follow these precautions before using the equipment.

If these precautions are not followed, injury or damage to the equipment may occur. Safety precautions are marked as WARNING or CAUTION and additional information as " !! ". The meanings of these precautions are as follows:

WARNING: Indicates hazardous situations that may lead to serious injuries or even death if the precaution is not or cannot be followed.

CAUTION: Indicates hazardous situations that may lead to mild or moderate injuries if the precaution is not or cannot be followed. Precautions against accidents causing only physical damage.

!! Indicates procedures requiring special attention, instructions that must be followed, supplementary explanations, etc.

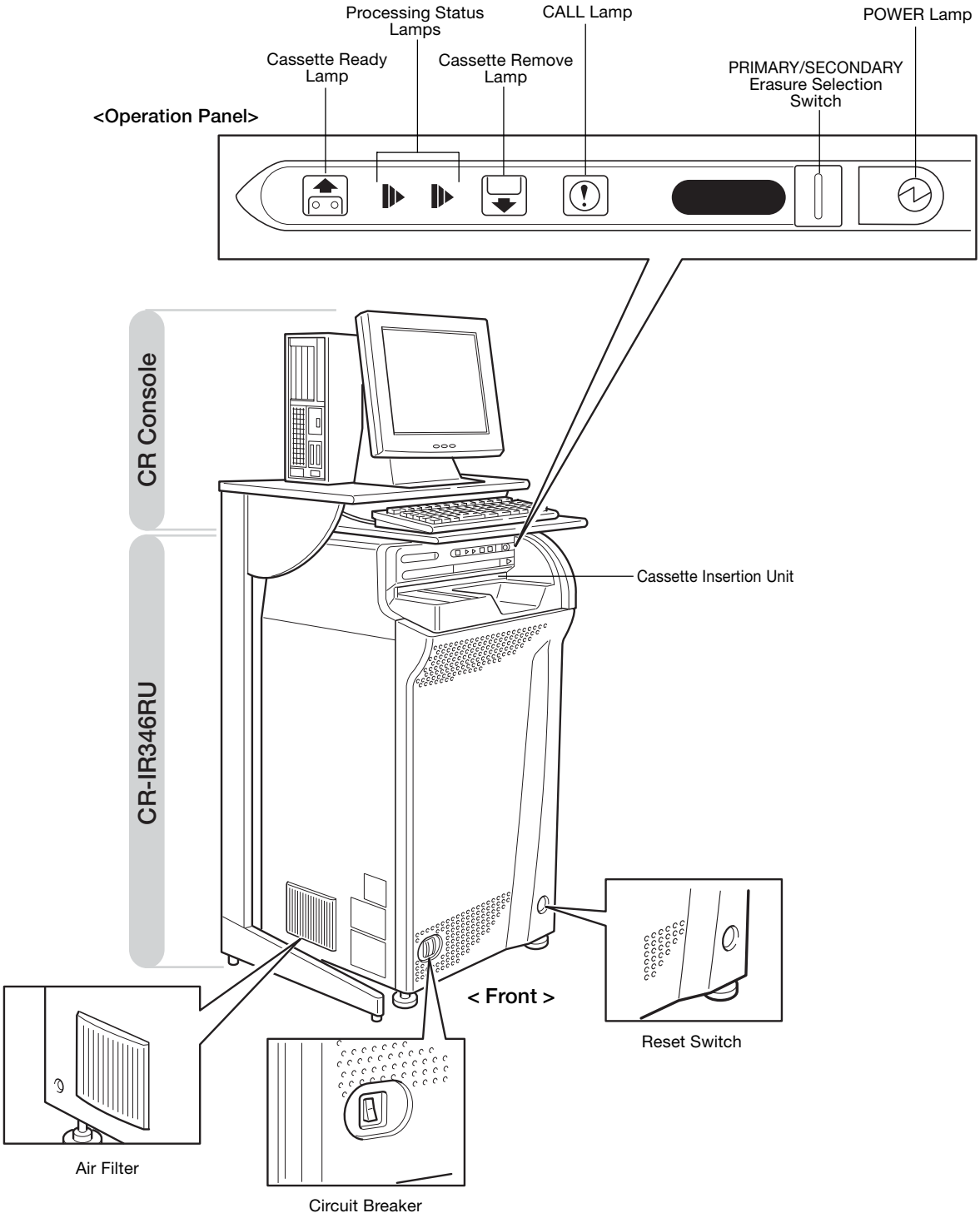
The institution where the equipment is installed is responsible for its use and maintenance. In addition, this equipment should not be used by persons other than doctors or suitably trained staff.

1.4 Hardware Configuration

1.4.1 Unit Names and Functions

The external view of the FCR XG-1 and the names of the components are shown below.

[Fig. 1.1] FCR XG-1 <External View and Component Names>



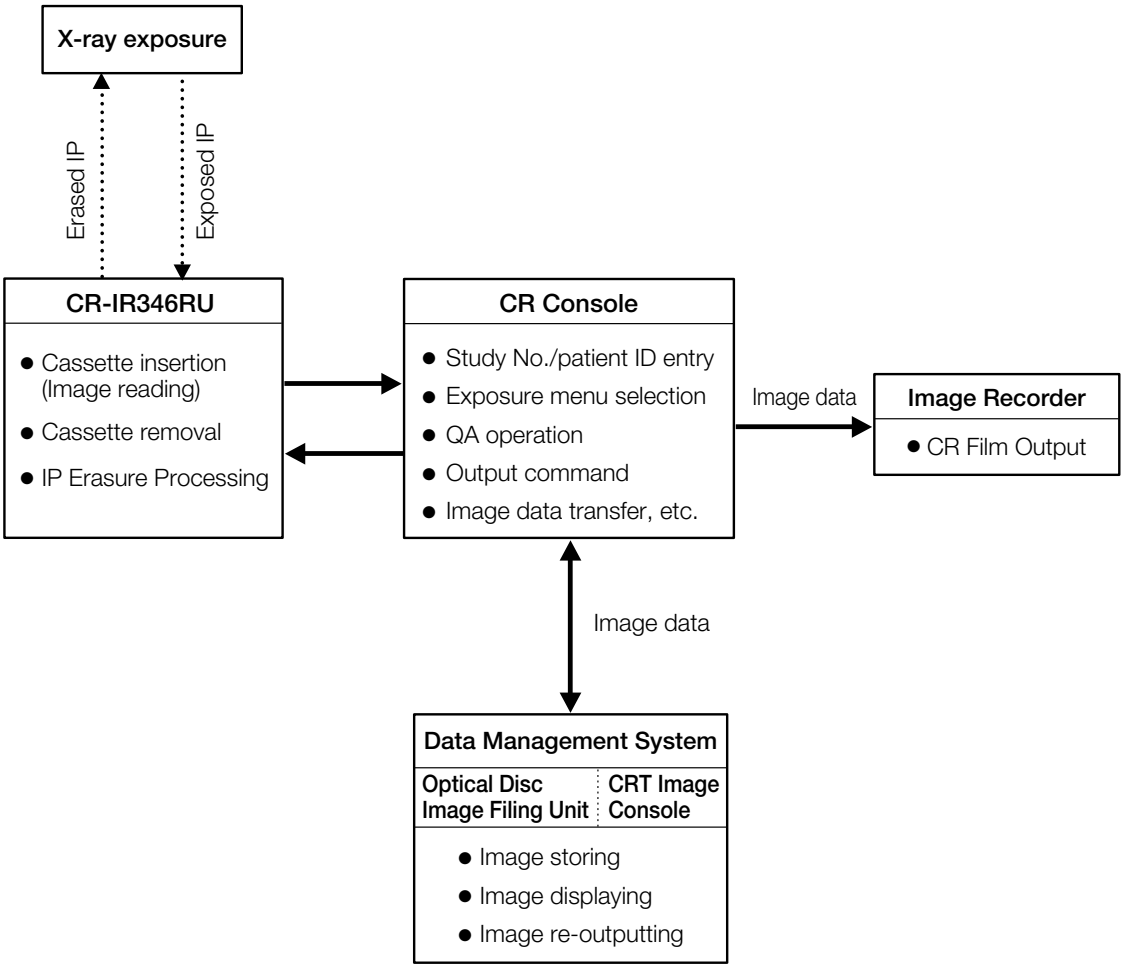
[Table 1-1] FCR XG-1 Component Names and Functions

Name	Function
Operation Panel	Operation panel for the CR-IR346RU.
POWER Lamp	Lights (green) when the circuit breaker has been set to the "I" side and the power turned ON. As the circuit breaker is basically left ON, the POWER Lamp will also basically be lit.
PRIMARY/SECONDARY Erasure Selection Switch	When you wish to conduct Primary or Secondary erasure to the cassette (IP), press this key to enter each mode. If this key is pressed once, the Secondary erasure will be selected and its icon mark (). If this key is pressed once again, the Primary erasure will be selected and its icon mark () will be highlighted. To return to the routine reading mode in this stage, press the key once again. As the mode selection operation procedure indicates, the key is designed with the toggle system as follows. ┌► Routine Reading mode → Secondary Erasure mode → Primary Erasure mode ┐
CALL Lamp	When the CALL Lamp lights (yellow), a pop-up window will appear on the screen of the CR Console. Do as the message in the window instructs. When the pop-up window is closed, the CALL Lamp will go OFF.
Cassette Ready Lamp	Lights (green) when the device has started up normally, indicating that cassette can be inserted. Cassette cannot be inserted when the lamp is OFF.
Progressing Status Lamps	Indicates the IP processing status.
Cassette Removal Lamp	Lights (green) when the processed cassette can be removed.
CR Console	Inputs exposure information, displays images and operates QA. For detailed operation procedures, see the **[CR Console Operaiton Manual]**.
Cassette Insertion Unit	Used for inserting cassette that contains an exposed IP.
Air Filter	Installed at the inlet of the ventilation fan.
Circuit Breaker	Should be left turned ON.
Reset Switch	Used only to reboot the CR-IR346RU. Never press this switch unless for error recovery processing.

1.5 Routine Operation Flowchart

The routine operation flowchart for the FCR XG-1 system is as follows.

[Fig. 1.2] Routine Operation Flowchart



Chapter **2**

Operations

2.1 Starting Up and Shutting Down the System

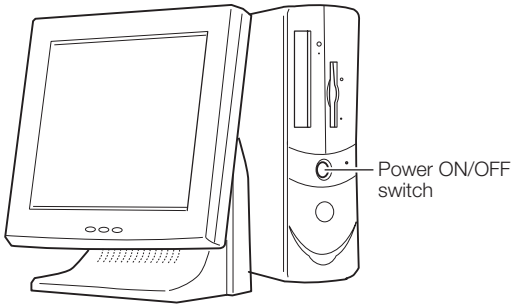
!! How to start up and shut down this system will differ whether the power to the CR–IR346CL and CR-IR346RU is interlocked with each other or not.

2.1.1 When the Power ON/OFF Sequences are Interlocked

▶ Starting Up the System

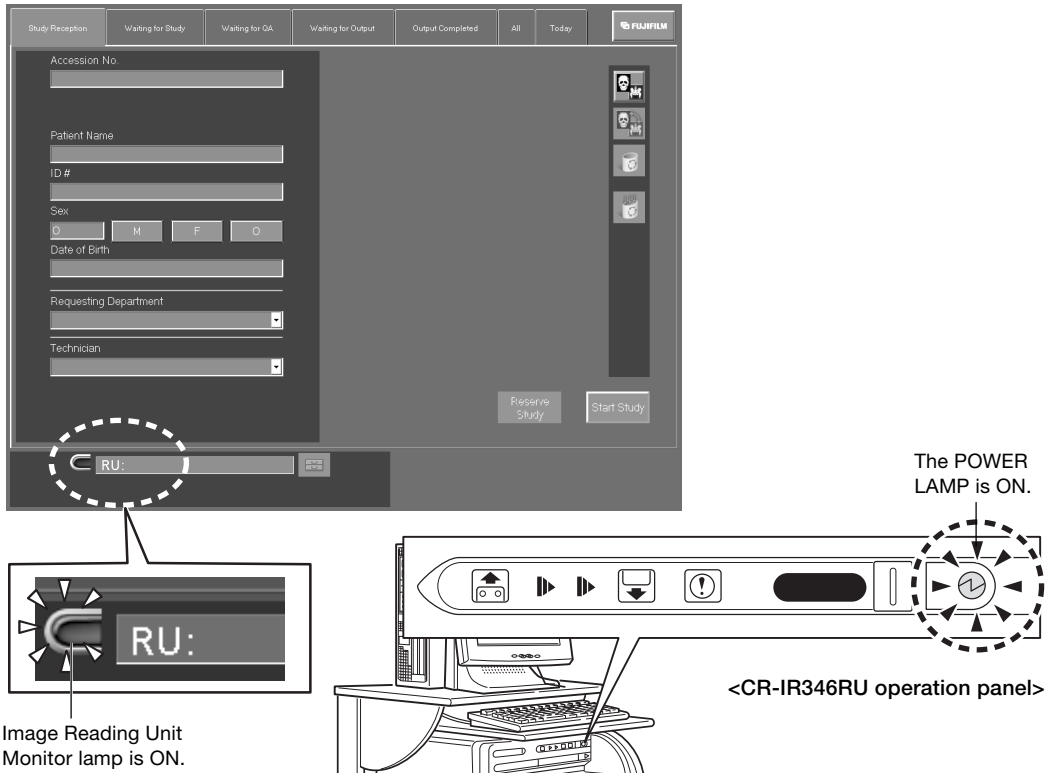
1 Start up the CR Console. (For detailed operation procedures, see the **[CR Console Operation Manual]**.)
The CR Console application software will start up.

[Fig. 2.1] CR Console Startup



2 The CR Console application software starts up, then the CR-IR346RU. When both the CR-IR346RU POWER LAMP and the CR Console Image Reading Unit Monitor lamp go ON, startup of the FCR XG-1 has been fully completed as a system.

[Fig. 2.2] CR Console Display Immediately After Startup

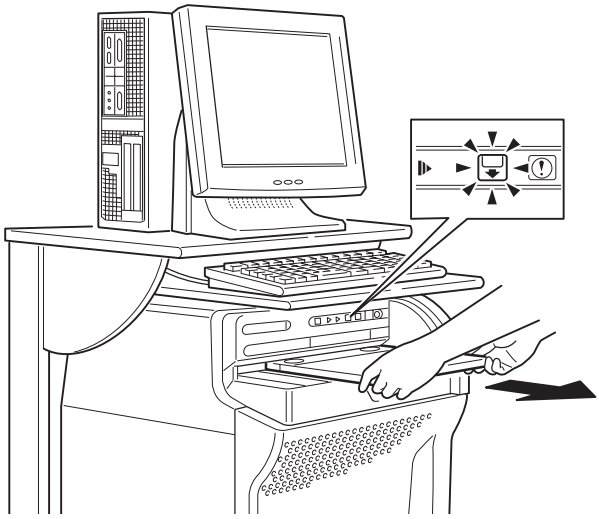


!! When a multiple number of Reading Units, including this device (CR-IR346RU), are connected, the status display changes to that shown below. For detailed operation procedure, see the separate [**CR Console Operation Manual**].

▶ Shutting Down the System

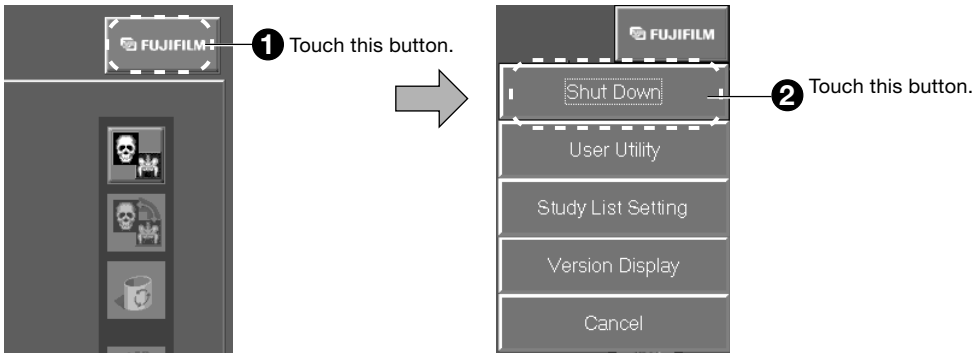
1 Confirm on the CR-IR346RU that cassette processing has been completed. If the cassette remains in the cassette setting unit, remove it.

[Fig. 2.3] Removing the Cassette



2 Shut down the CR Console. (For detailed operation procedures, see the **[CR Console Operation Manual]**.) The CR-IR346RU will then be in standby status automatically.

[Fig. 2.4] Shutting Down the CR Console

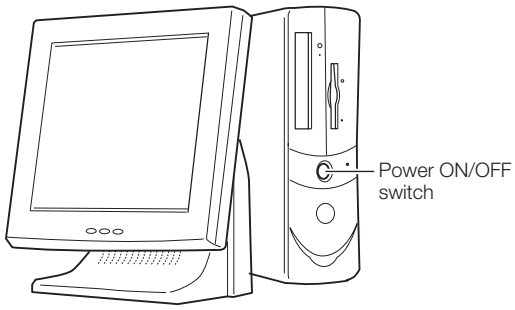


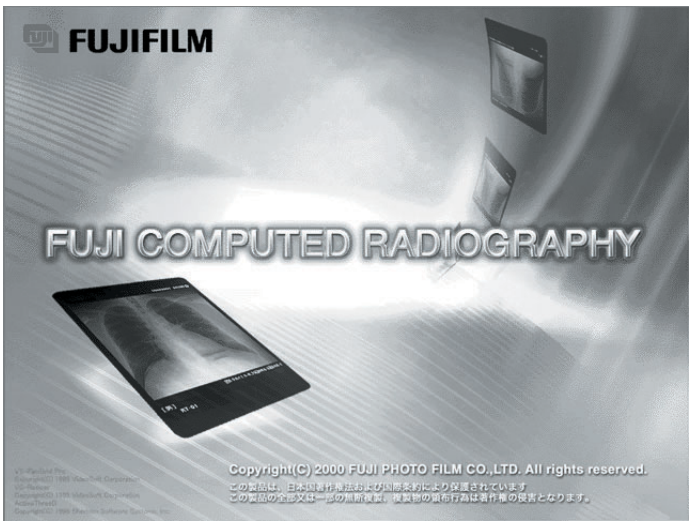
2.1.2 When the Power ON/OFF Sequences are Not Interlocked

▶ Starting Up the System

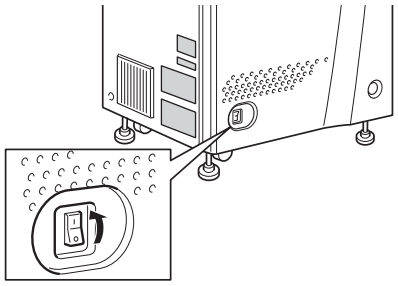
1 Start up the CR Console.
(For detailed operation procedures, see the **[CR Console Operation Manual]**.)
The CR Console application software will start up.

[Fig. 2.5] CR Console Startup



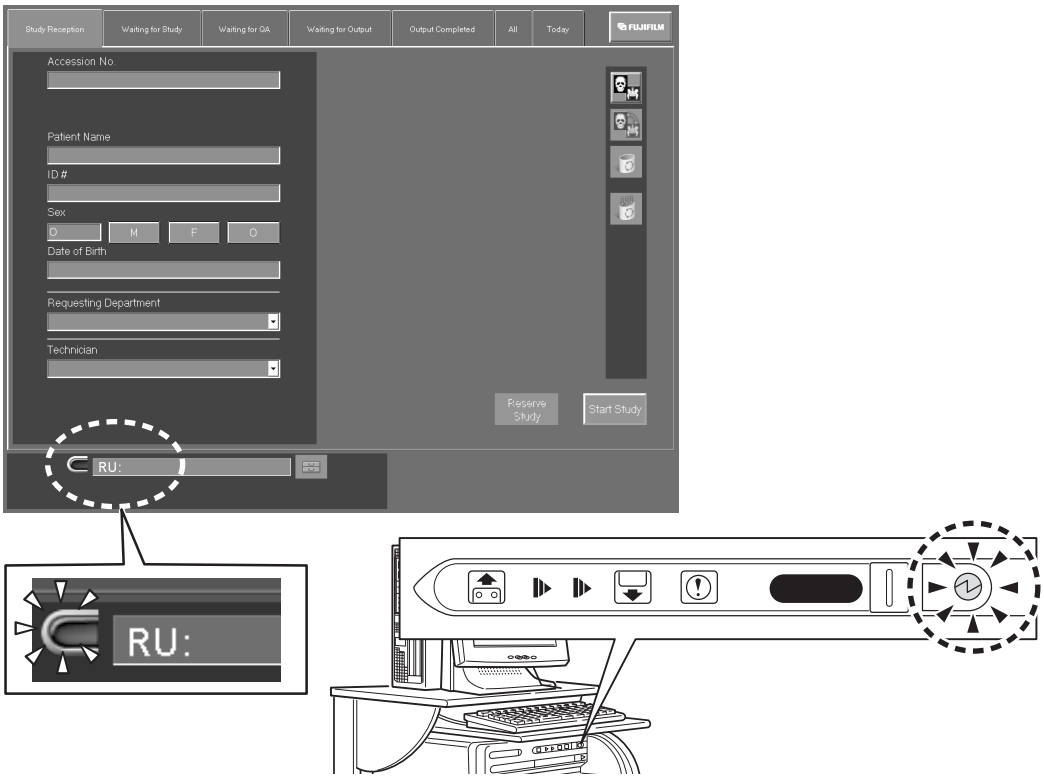


2 Push the CR-IR346RU circuit breaker to the "**I**" side for turning the power ON.



When both the CR-IR346RU POWER LAMP and the CR Console Image Reading Unit Monitor lamp turn ON, startup of the FCR XG-1 has been completed as a system.

[Fig. 2.6] CR Console Display Immediately After Startup

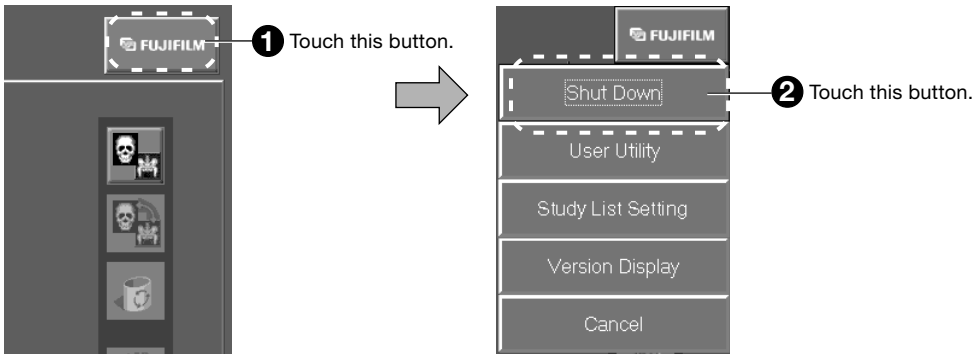


!! When a multiple number of Reading Units, including this device (CR-IR346RU), are connected, the status display changes to that shown below. For detailed operation procedure, see the separate [**CR Console Operation Manual**].

▶ Shutting Down the System

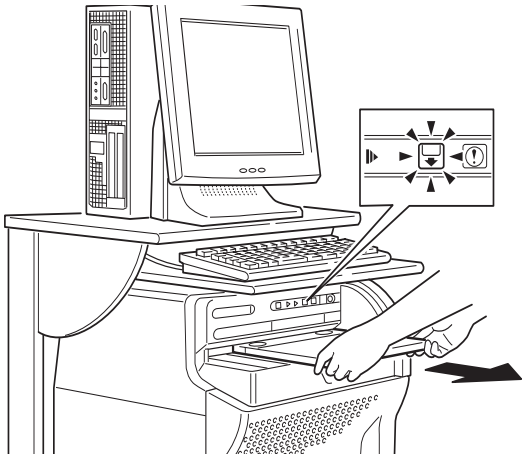
1 Shut down the CR Console. (For detailed operation procedures, see the **[CR Console Operation Manual]**.)

[Fig. 2.7] Shutting Down the CR Console



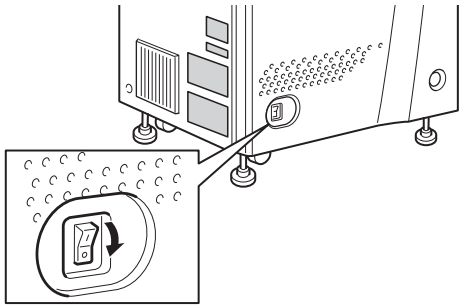
2 Confirm on the CR-IR346RU that cassette processing has been completed. If the cassette remains in the cassette setting unit, remove it.

[Fig. 2.8] Removing the Cassette



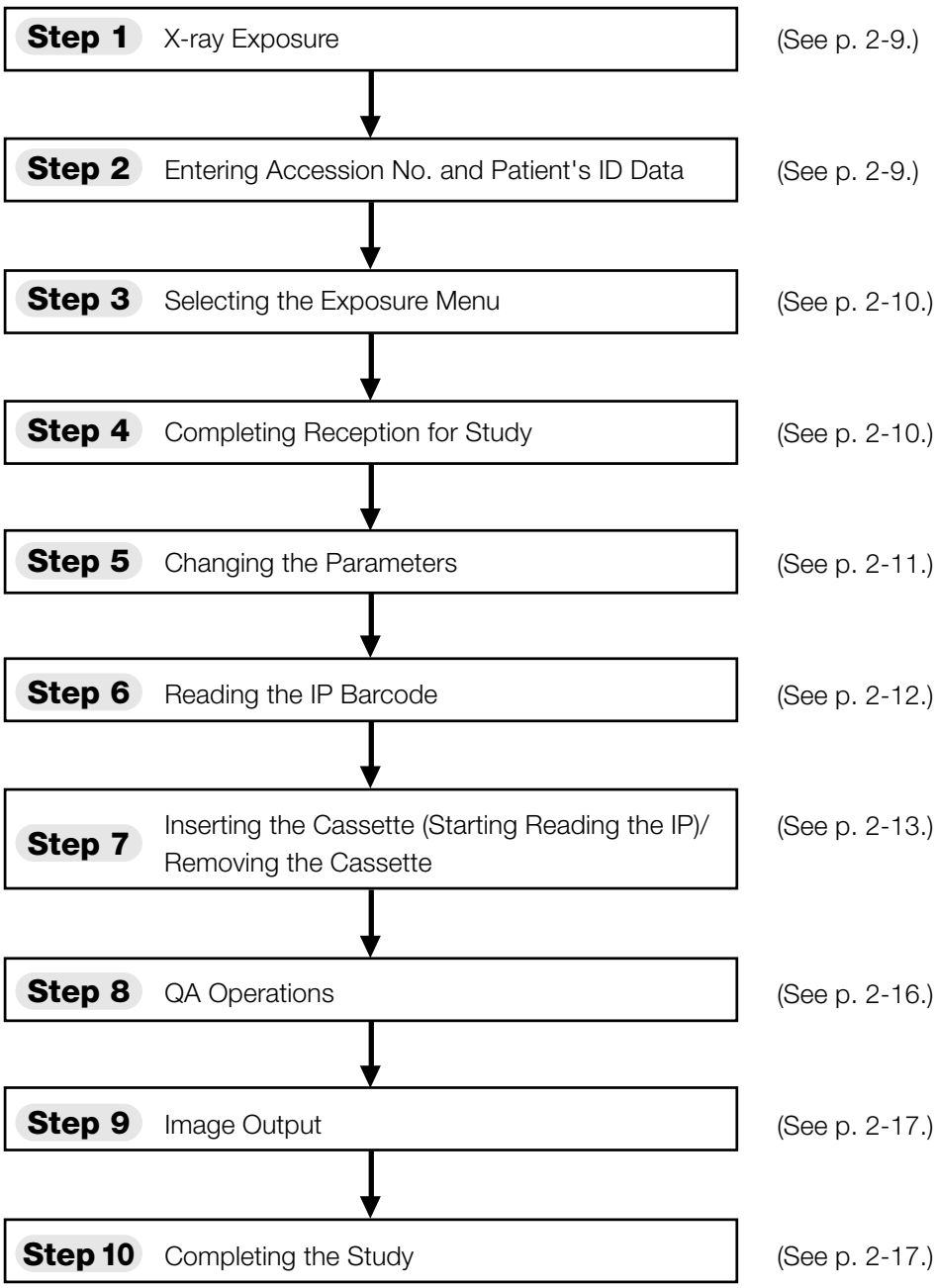
3 Push the CR-IR346RU circuit breaker to the "**O**" side for turning the power OFF. The CR-IR346RU will then shut down.

[Fig. 2.9] Turning the Power OFF



2.2 Routine Operations

FCR XG-1 routine operations can be broadly divided into the following ten steps.


Step 1 X-ray Exposure
(See p. 2-9.)
Step 2 Entering Accession No. and Patient's ID Data
(See p. 2-9.)
Step 3 Selecting the Exposure Menu
(See p. 2-10.)
Step 4 Completing Reception for Study
(See p. 2-10.)
Step 5 Changing the Parameters
(See p. 2-11.)
Step 6 Reading the IP Barcode
(See p. 2-12.)
Step 7 Inserting the Cassette (Starting Reading the IP)/ Removing the Cassette
(See p. 2-13.)
Step 8 QA Operations
(See p. 2-16.)
Step 9 Image Output
(See p. 2-17.)
Step 10 Completing the Study
(See p. 2-17.)

!! "**Step 6** **Reading the IP Barcode**" needs be performed only when a multiple number of Reading Units, including this device (CR-IR346RU), are connected to one CR Console.
It is thus not necessary to perform Step 6 if this device is connected only to one CR Console individually.

Step 1 X-ray Exposure

Using a cassette that contains an erased IP, conduct X-ray exposure using the same technique as for the conventional film/screen method.
For precautions particular to exposure using the FCR system, see **Appendix Z, Precautions for Exposure**. Read it well first and then conduct exposure while observing the related caution.

Concerning IP erasure method, see **2.3 Conducting Exposure Using a Cassette (IP) Left Unused for 8 Hours or More [SECONDARY ERASURE]** and **2.4 Conducting Image Erasure Only [PRIMARY ERASURE]**.

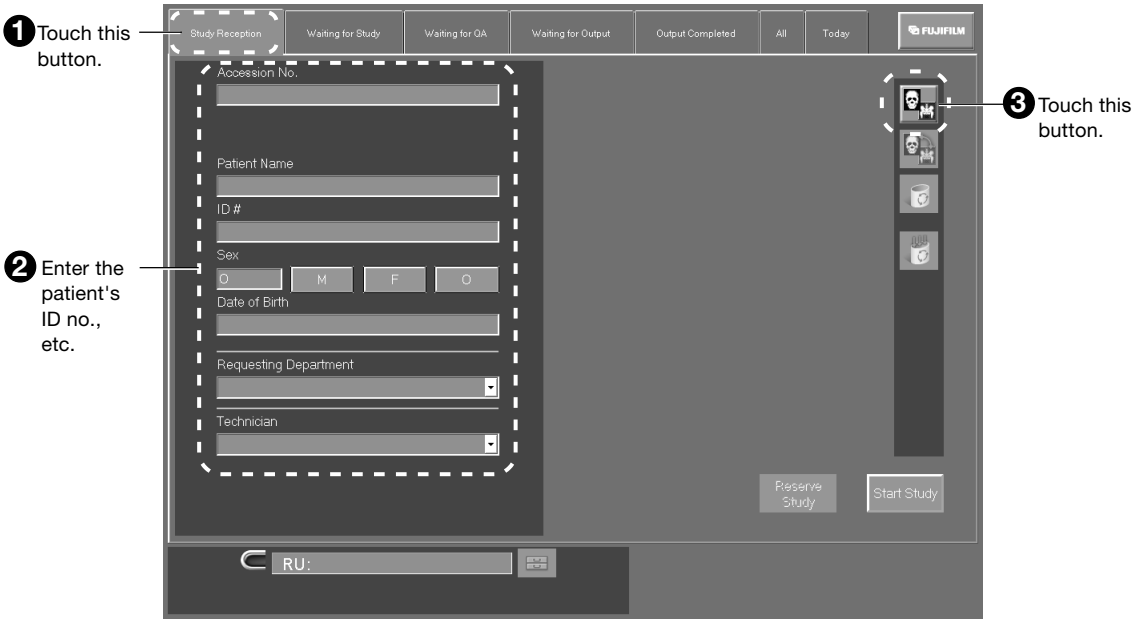
Step 2 Entering Accession No. and Patient's ID Data

On the CR Console, enter the accession no., patient's ID no., requesting department and technician's name concerning the study that is to be started.

!! If the optional card reader is provided, the above information items can be entered using an ID card (CR card).
Such information items can also be entered from the HIS/RIS via the network. In this case, the patient's ID no., etc. entered will then be registered to the "Waiting for Study" list.

On the "**Study Reception**" screen like that shown below, enter the patient's ID no., etc. from the keyboard. (For detailed operation procedures, see the **[CR Console Operation Manual]**.)
Upon completion of entry of the patient's ID no., etc., touch the (exposure menu selection/addition) button on the upper right of the screen.

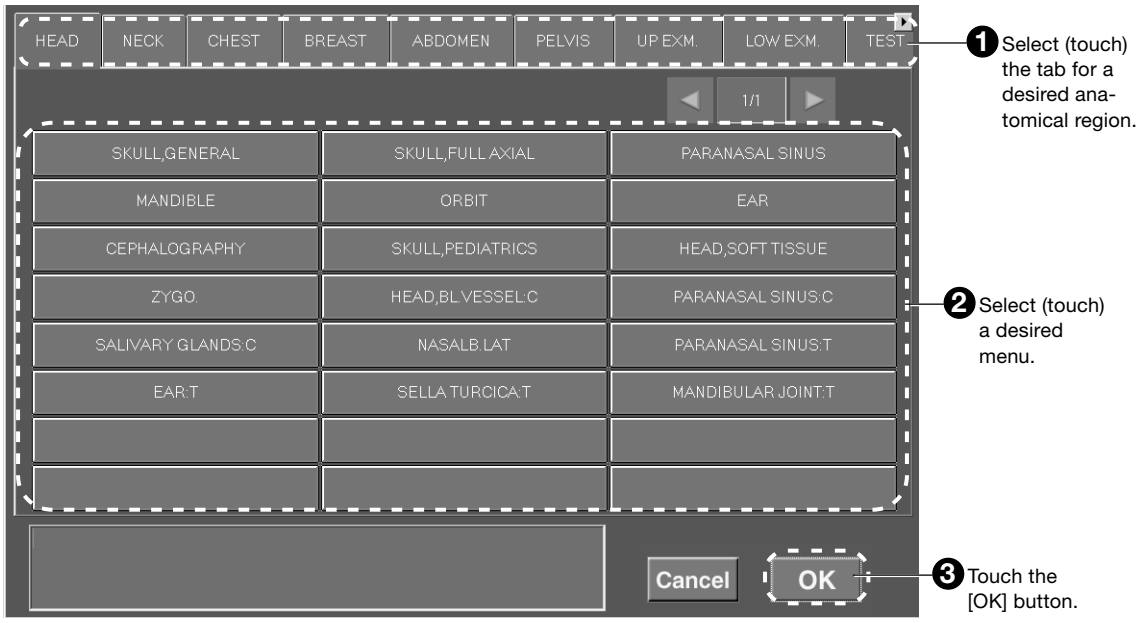
[Fig. 2.10] Study Reception Screen



Step 3 Selecting the Exposure Menu

Select (touch) the target exposure menu on the "**Exposure Menu Selection**" screen, then touch the OK button on the lower right. (For detailed operation procedures, see the **[CR Console Operation Manual]**.)

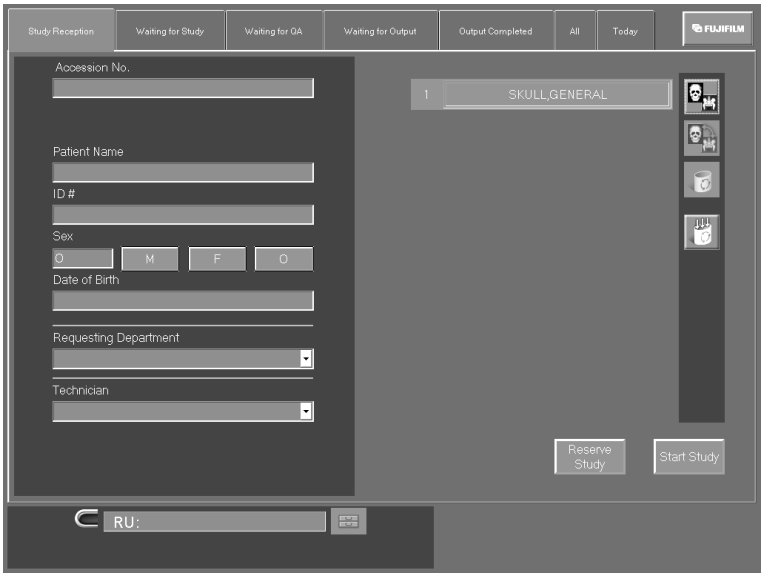
【Fig. 2.11】 Exposure Menu Selection Screen



Step 4 Completing Reception for Study

Exposure menus thus selected will be listed as shown on the right of the screen.

【Fig. 2.12】 Study Reception Completed Screen



Touching the Start Study button will proceed the display to the examination execution screen.

Touching the Reserve Study button will reserve studies. Studies thus reserved will be saved in the "Waiting for Study" folder.

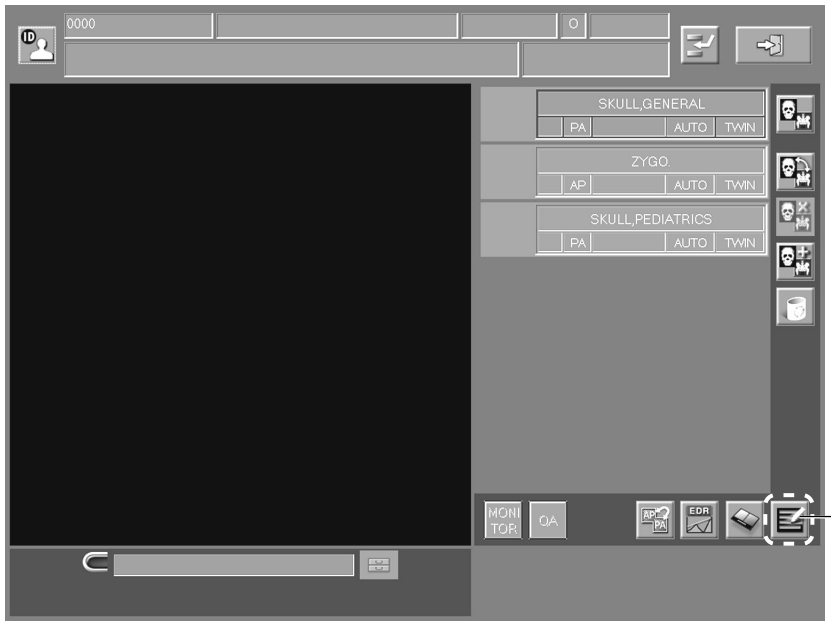
Step 5 Changing the Parameters

Once the reception of studies has been completed, the "**Start Study**" screen like that shown below will appear.

!! If **[Reserve Study]** is selected at **Step 4** above, touch the "Study Reservation" tab to display the reservation list. Select then the target study and touch (execution key). The "**Start Study**" screen will appear.

Touch (parameter setting button) on the lower right of the screen.

[Fig. 2.13] Start Study Screen



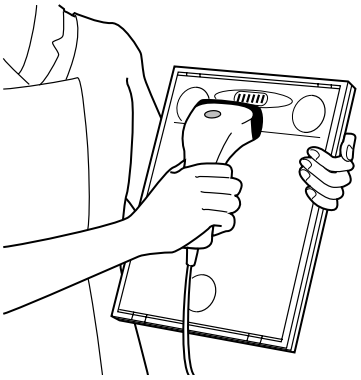
The parameter setting screen appears. Perform the following user settings accordingly. (For detailed operation procedures, see the **[CR Console Operation Manual]**.)

	Selecting the frontal or right-and-left reverse image		Selecting one- or two-image output
	Setting EDR mode		Selecting filing ON/OFF
	Selecting function processing		Setting the film mark
	Setting the number of output films		Setting the image distribution code
	Selecting logical reading		Setting CS/SS

Step 6 Reading the IP Barcode

!! Perform this step only when a multiple number of Reading Units, including this device (CR-IR346RU), are connected to the CR Console.

To read the IP barcode, use the dedicated barcode reader connected to the CR Console. A beep will sound to indicate the completion of IP barcode reading.



IP barcode number will be displayed.

Step 7 Inserting the Cassette (Starting Reading the IP)/Removing the Cassette

▶ Inserting the Cassette

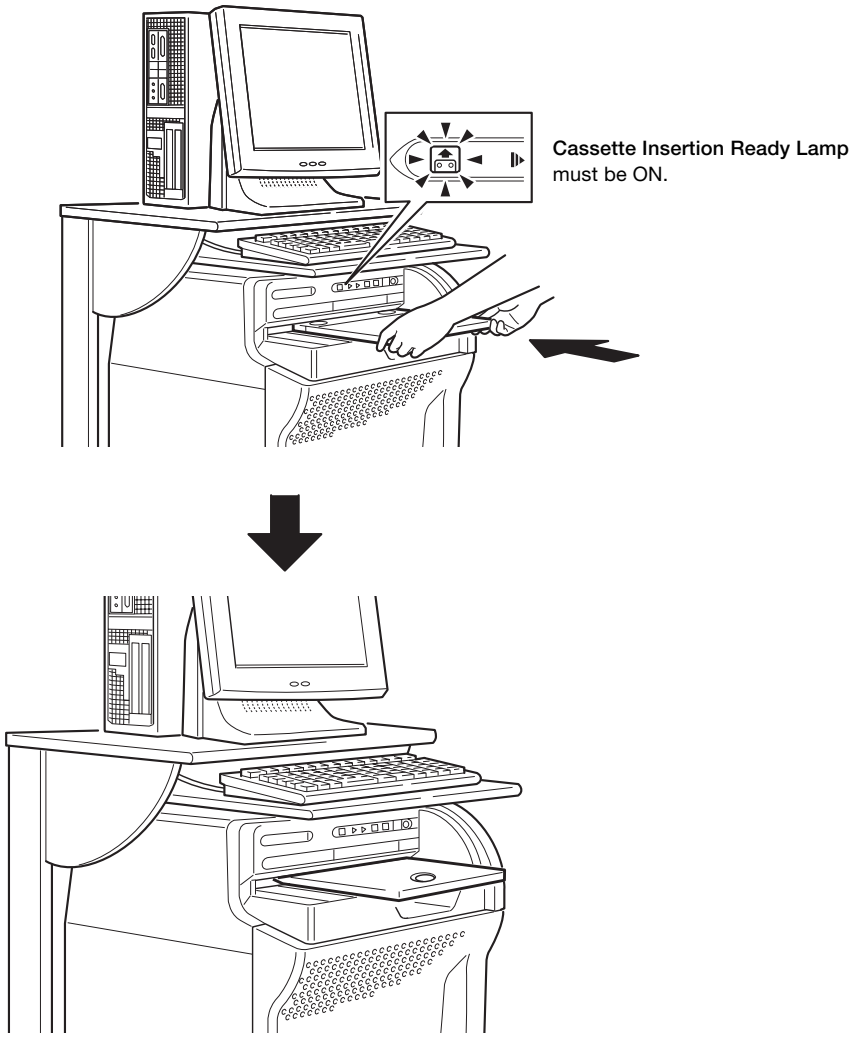
Insert the cassette (IP) that has been subjected to exposure into the cassette setting unit.

1 Confirm that the **Cassette Insertion Ready Lamp** on the operation panel has been lit (green).

2 With the cassette's barcode window facing up and in front, insert the cassette straight along the guide on the right.

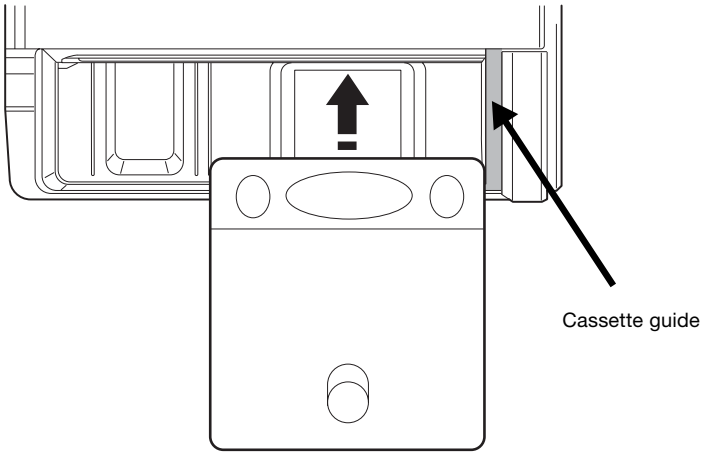
!! 1 Be sure to insert the cassette as illustrated, straight along the guide on the right. Cassettes that have been set upside-down, in the wrong orientation or at a slant will result in operating errors and may damage the machine.
2 Before inserting the cassette, make sure to remove all exposure markers used at the time of exposure.

【Fig. 2.14】 Inserting the Cassette



■ Precautions when inserting the cassette

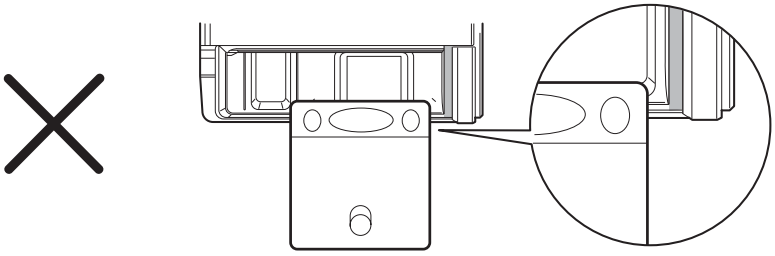
Make sure to insert the cassette **Slowly** so that it is straight along the guide on the right.



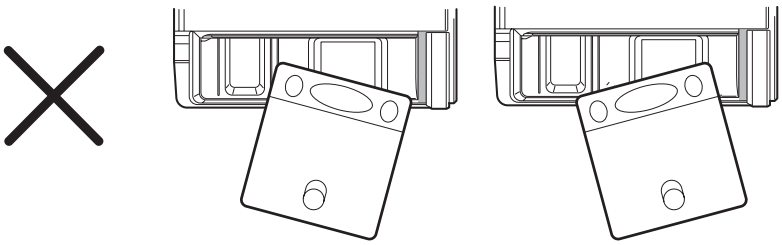
Insert straight Slowly.

CAUTION: Never insert a cassette as illustrated below or damage to the device could result.

Incorrect: Cassette is not straight along the guide. There is a gap.



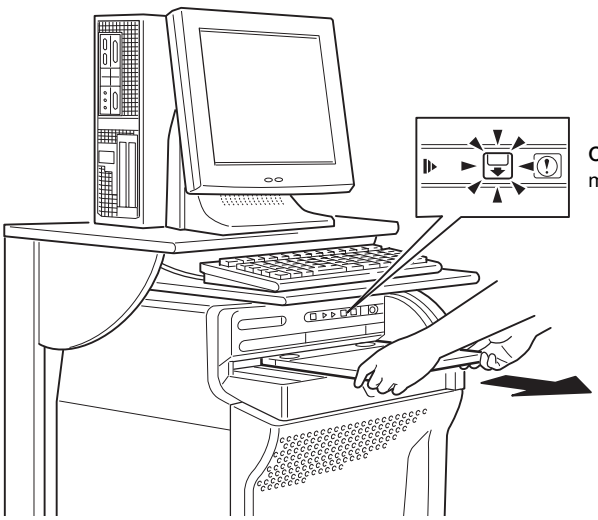
Incorrect: Cassette is inserted at a slant.



▶ Removing the Cassette

Confirm that the **Cassette Removal Lamp** has been lit. Remove then the cassette **slowly** and use it for the next exposure.

【Fig. 2.15】 Removing the Cassette

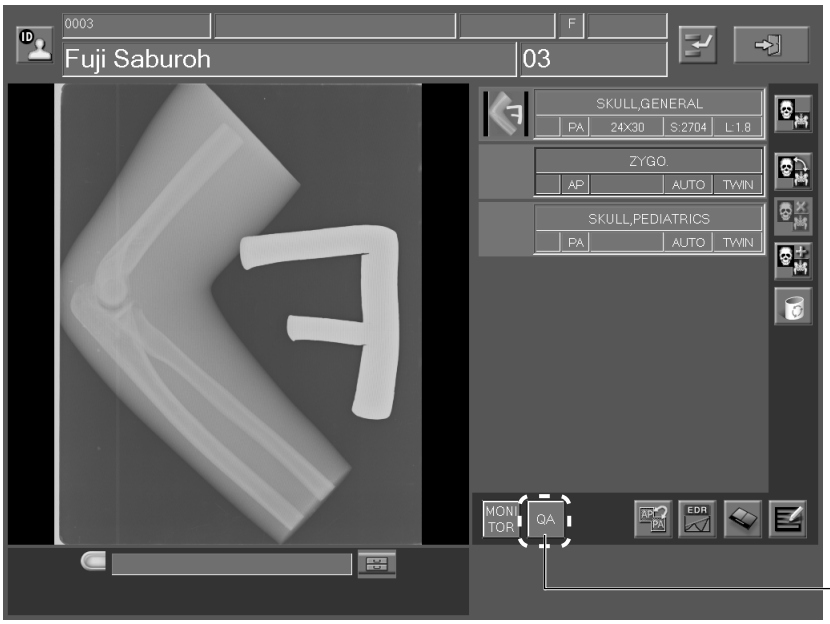


Step 8 QA Operations

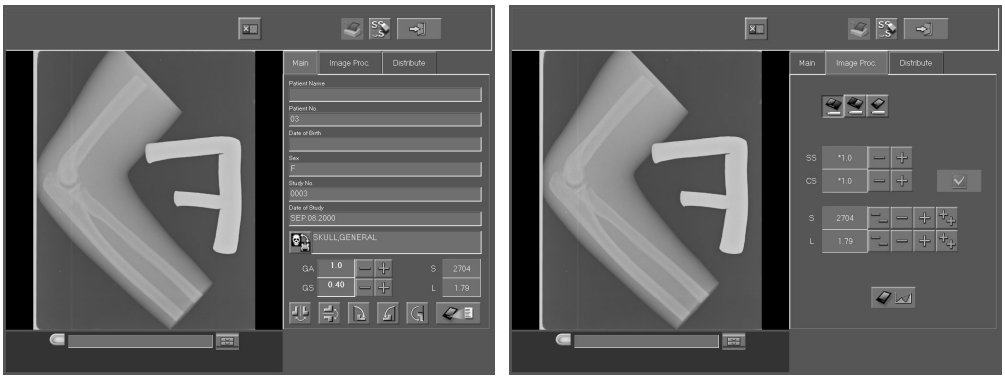
The image read by the CR-IR346RU will be displayed on the CR Console monitor (left half of the screen). When the image reading is completed, the thumbnail images will then be displayed in the exposure menu display area on the right half of the screen.

Touch the QA (QA) button on the bottom of the screen.
The "QA Operation Screen" like that shown below will appear.

【Fig. 2.16】 Read Image Display Screen



【Fig. 2.17】 QA Operation Screen



The following QA (Quality Assurance) operations are possible on the read image.

- Image reversal/rotation
- Changing parameters
- Specifying/changing image destinations
- List display

(For detailed operation procedures, see the **[CR Console Operation Manual]**.)

Step 9 Image Output

Touch the (Print) button. Command will be transmitted to the specified device (printer, etc.) for outputting the image.

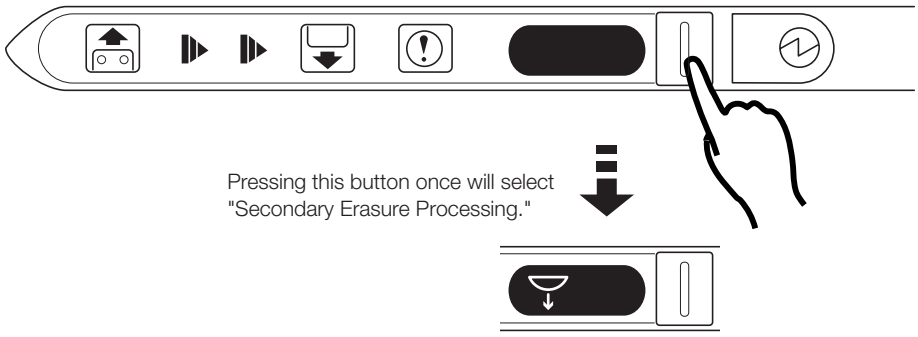
Step 10 Completing the Study

When a series of studies is completed, touch the (Study Completed) button to fully complete it.

2.3 Conducting Exposure Using a Cassette (IP) Left Unused for 8 Hours or More [SECONDARY ERASURE]

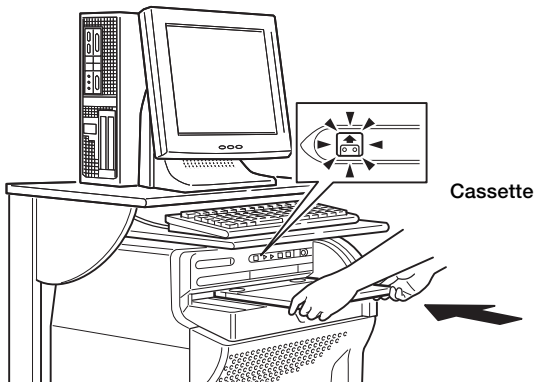
When conducting exposure with a cassette (IP) that has not been used for 8 hours or more, the cassette (IP) should be subjected to "Secondary Erasure Processing" for erasing such excess energy as natural radioactive rays accumulated on the IP. Operation procedures follow.

1 Press the **Erasure Selection Switch** once to select "Secondary Erasure Processing."



RU: Secondary Erasure Processing will be displayed in the Reading Unit status display area of the CR Console.

2 "Secondary Erasure Processing" has thus been specified for the cassette to be inserted. Insert the cassette in the cassette setting unit. The IP contained in the cassette will be subjected to "Secondary Erasure Processing."
As the IP returned to the cassette will have been undergone "Secondary Erasure Processing," it can be now used for exposure.



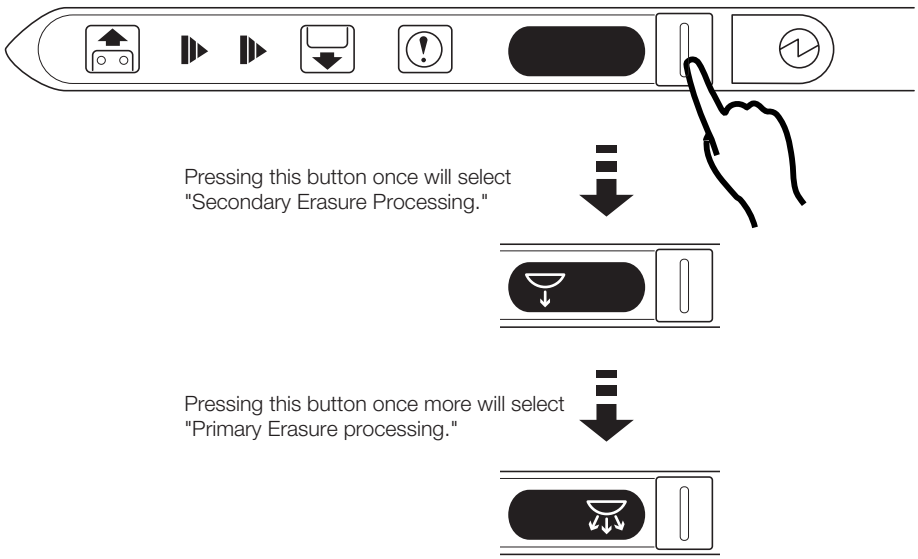
Cassette Insertion Lamp must be lit.

!! When "Secondary Erasure Processing" has been specified, the setting (display) will be returned to default status ("Reading") at the stage the cassette is inserted. The setting is thus valid one time only.

2.4 Conducting Image Erasure Only [Primary Erasure]

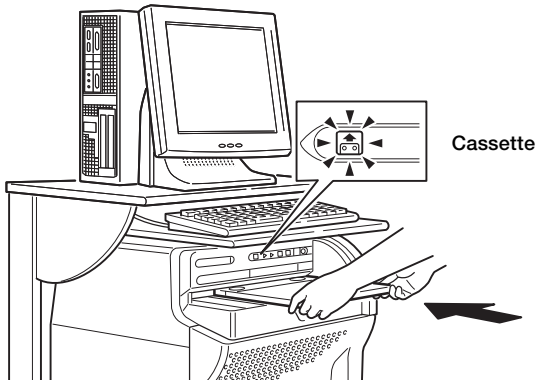
To erase an image on IP --- owing to exposure errors, etc. --- without reading it, use the following procedure to conduct "Primary Erasure Processing." Operation procedures follow.

1 Press the **Erasure Selection Switch** twice to select "Primary Erasure Processing."


Pressing this button once will select
"Secondary Erasure Processing."
Pressing this button once more will select
"Primary Erasure processing."

RU: Primary Erasure Processing will be displayed in the Reading Unit status display area of the CR Console.

2 "Primary Erasure Processing" has thus been specified for the cassette to be inserted. Insert the cassette in the cassette setting unit. The IP contained in the cassette will be subjected to "Primary Erasure Processing."
As the IP returned to the cassette will have been undergone "Primary Erasure Processing," it now can be used for exposure.



Cassette Insertion Lamp must be lit.

!! When "Primary Erasure Processing" has been specified, the setting (display) will be returned to default status ("Reading") at the stage the cassette is inserted. The setting is thus valid one time only.

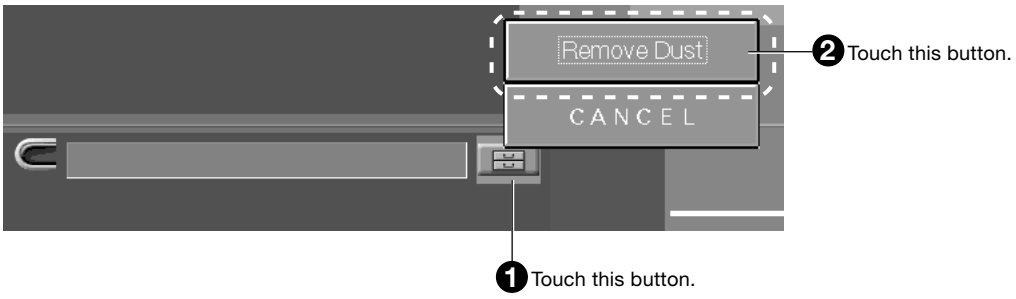
2.5 Removing Dust

Regularly remove dust accumulated inside the Reading Unit using the procedure below.

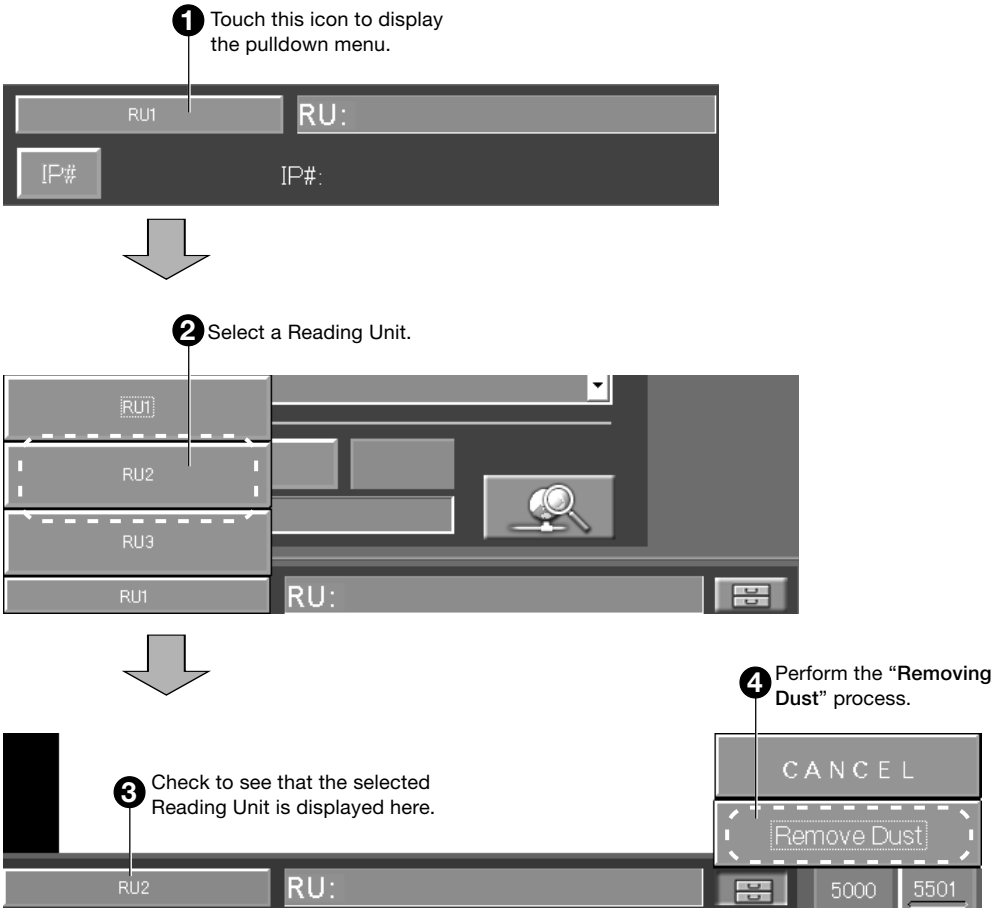
Touch the Utility button on the right of the Reading Unit status display area.

When the following menu appears, touch the Remove Dust Dust Removal button.

This procedure will be completed in about 15 seconds.



!! When a multiple number of Reading Units, including this device (CR-IR346RU), are connected to the CR Console, select a Reading Unit you wish to clean and then perform the “Removing Dust” process.



Chapter **3**

When an Error Occurs

3.1 When an Error Occurs

When an error occurs in the Reading Unit (CR-IR346RU) or the CR Console, the CR-IR346RU alarm will sound and the CALL lamp light (yellow).
In this case, the relevant error message will be displayed on the CR Console monitor. Check the displayed message on the monitor to take appropriate countermeasures in accordance with the separate **[CR Console Operation Manual]** as required.

Appendix **A**

Specifications

1 Processing Capacity

(1) Processing Capacity

● With ST-VI IP

	① With FM-DP L	② With FM-DP L	③ With DRYPIX 1000	④ With FM-DP 2636
14 × 17" (35 × 43cm)	Approx. 54 IPs / hr.	Approx. 56 IPs / hr.	Approx. 54 IPs / hr.	Approx. 50 IPs / hr.
14 × 14" (35 × 35cm)	Approx. 62 IPs / hr.	Approx. 64 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.
10 × 12"	Approx. 66 IPs / hr.	Approx. 69 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.
8 × 10"	Approx. 81 IPs / hr.	Approx. 85 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.
24 × 30cm (ST)	Approx. 66 IPs / hr.	Approx. 69 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.
18 × 24cm (ST)	Approx. 85 IPs / hr.	Approx. 90 IPs / hr.	Approx.60 IPs / hr.	Approx. 50 IPs / hr.

①/③ Assuming the time required for replacing the cassette to be 2 sec.
② Assuming the time required for replacing the cassette to be 0 sec.
④ Assuming the time required for replacing the cassette to be within 8 sec.

● With ST-VN IP

	① With FM-DP L	② With FM-DP L	③ With DRYPIX 1000	④ With FM-DP 2636
14 × 17" (35 × 43cm)	Approx. 50 IPs / hr.	Approx. 52 IPs / hr.	Approx. 50 IPs / hr.	Approx. 50 IPs / hr.
14 × 14" (35 × 35cm)	Approx. 58 IPs / hr.	Approx. 60 IPs / hr.	Approx. 58 IPs / hr.	Approx. 50 IPs / hr.
10 × 12"	Approx. 62 IPs / hr.	Approx. 64 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.
8 × 10"	Approx. 76 IPs / hr.	Approx. 80 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.
24 × 30cm (ST)	Approx. 62 IPs / hr.	Approx. 64 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.
18 × 24cm (ST)	Approx. 80 IPs / hr.	Approx. 83 IPs / hr.	Approx. 60 IPs / hr.	Approx. 50 IPs / hr.

①/③ Assuming the time required for replacing the cassette to be 2 sec.
② Assuming the time required for replacing the cassette to be 0 sec.
④ Assuming the time required for replacing the cassette to be within 3 sec.

Applicable when X-ray dose is the same as chest exposure done with Hi-screen B-2/New RX for ST.

(2) Time Required for Film Output

For the FM-DP L: Approx. 190 sec.
For the DRYPIX 1000: Approx. 190 sec.
For the FM-DP 2636 : Approx. 170 sec.

(With 14"×14" (35×35cm) size IP, from cassette insertion to film output (two-image)) when the CR Console is connected to the printer directly.

2 Image Reading

(1) Available IP types and sizes

1. Inch settings VI (standard type): 14" × 17", 14" × 14", 10" × 12", 8" × 10"
2. Metric settings VI (standard type): 35 × 43cm, 35 × 35cm, 24 × 30cm, 18 × 24cm

!! HR-V18×24cm IPs can only be used with metric settings, with 18×24M cassettes.

(2) IP auto feed/load mechanism cycle time

	IP auto feed/load mechanism cycle time
14 × 17" (35 × 43cm)	Approx. 64sec.
14 × 14" (35 × 35cm)	Approx. 56 sec.
10 × 12"	Approx. 52 sec.
8 × 10"	Approx. 42 sec.
24 × 30cm (ST)	Approx. 52 sec.
18 × 24cm (ST)	Approx. 40 sec.

Applicable when X-ray dose is the same as chest exposure done with Hi-screen B-2/New RX for ST.
(When the maximum dose applied to the IP exceeds 25mR for ST, the cycle time will increase in accordance with the increase in dose. The above times are for processing one cassette.)

(3) Reading gray scale 12 bits/pixel
Output gray scale 10 bits/pixel

(4) Reading Specification

Reading Size		14" × 17"	14" × 14"	10" × 12"	8" × 10"	24 × 30cm	18 × 24cm
Standard Pixel-density	Sampling Rate (pixels / mm)	5	5	6.7	10	6.7	10
	Number of Pixels	1760 × 2140	1760 × 1760	1670 × 2010	2000 × 2510	1576 × 1976	1770 × 2370
High Pixel-density	Sampling Rate (pixels / mm)	10	10	10	10	10	10
	Number of Pixels	3520 × 4280	3520 × 3520	2505 × 3015	2000 × 2510	2364 × 2964	1770 × 2370

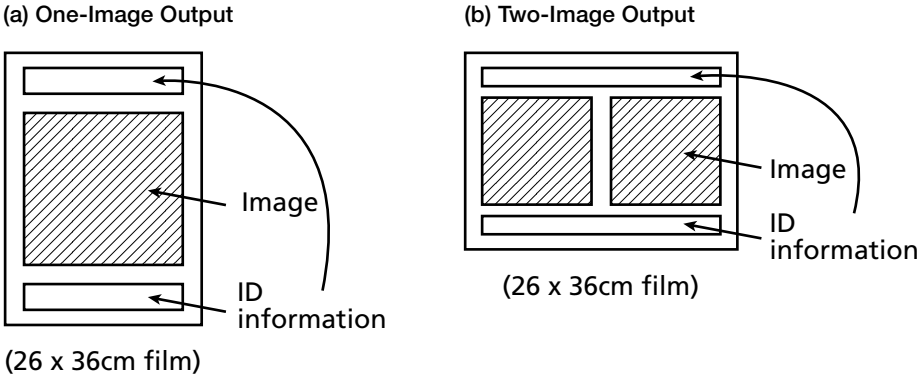
3 Image Output

(1) Film output at the Image Recorder
Connection to the Image Recorder will make it possible to obtain hard copy in the following image reduction ratios and formats.

● For standard pixel-density images

Reading size	Reduction ratio	
	Two-image output	One-image output
14 × 17" (35 × 43cm)	50%	67%
14 × 14" (35 × 35cm)	50%	67%
10 × 12"	67%	100%
8 × 10"	86%	100%
24 × 30cm	67%	100%
18 × 24cm	86%	100%

[Fig. A.1]



● For high pixel-density images

Reading size	Reduction ratio	
	Two-image output	One-image output
14 × 17" (35 × 43cm)	50%	100%
14 × 14" (35 × 35cm)	50%	100%
10 × 12"	67%	100%
8 × 10"	86%	100%
24 × 30cm	67%	100%
18 × 24cm	86%	100%

For one-image output using 14"×17" or 14"×14" IPs, images are output on 14"×17" size film. In other cases, images are output on 26x36cm size film.

4 Power Supply Conditions

Image reader (CR-IR346RU)

Single phase 50/60Hz: 100-120 / 200−240VAC±10%
3A

5 Environmental Conditions

(1) Operating Conditions

Temperature: 15-30°C
Humidity: 40-80%RH (No dew condensation)

(2) Non-Operating Conditions

Temperature: 0-45°C
Humidity: 10-90%RH (No dew condensation)

6 External Dimensions and Weight

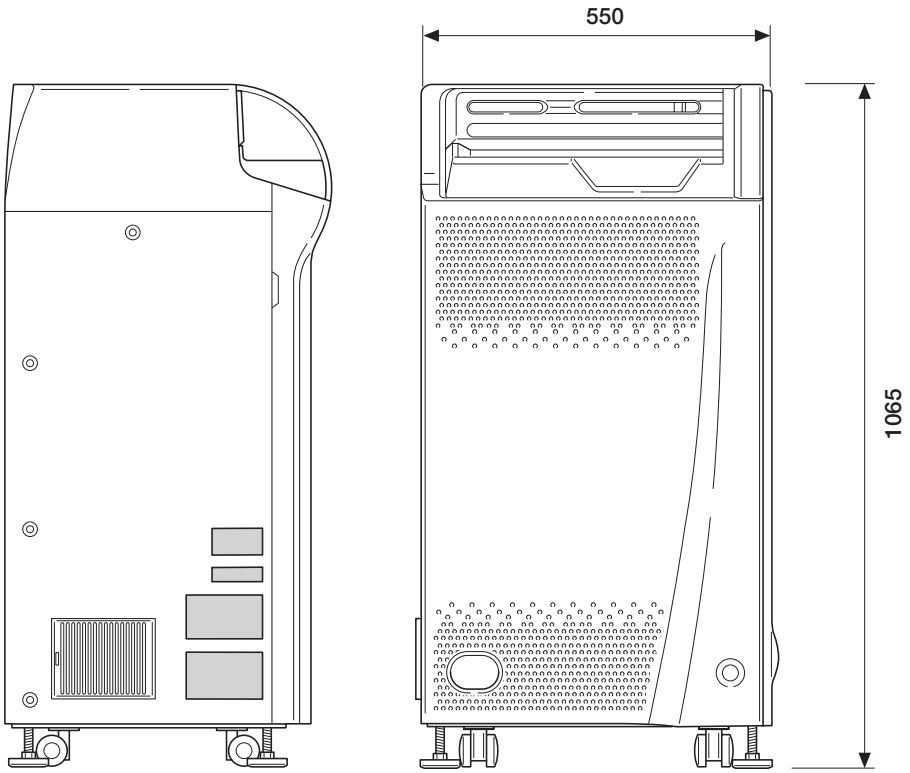
Width (mm)	550
Depth (mm)	515
Height (mm)	1065
Weight (kg)	155

!! Dimensions and weight are approximate and are subject to change without prior notice.

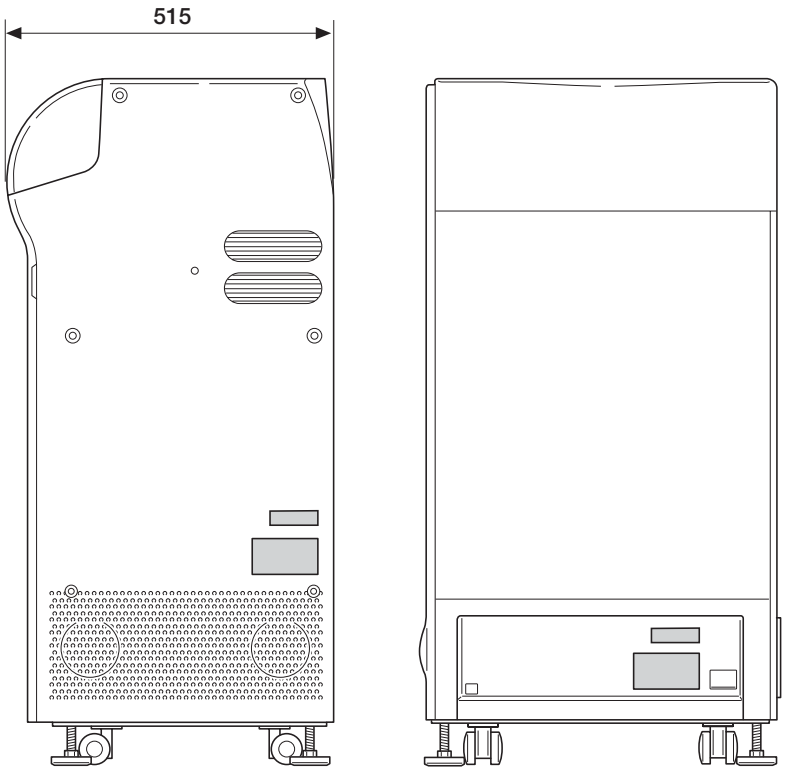
7 CR-IR346RU External View

[Fig. A.2] Image Reader main unit

Unit: mm



<Left-side> <Front>



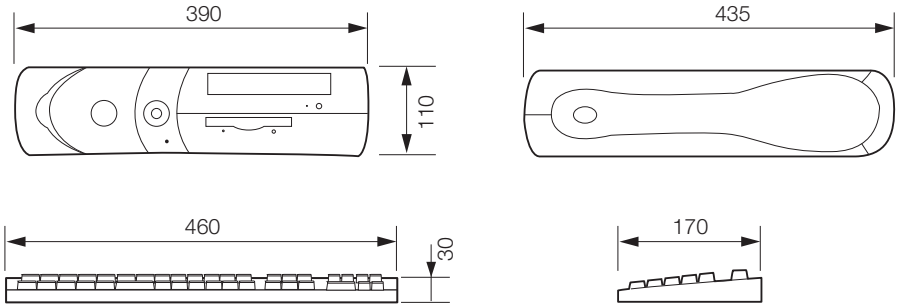
<Right-side> <Rear>

8 CR Console External View

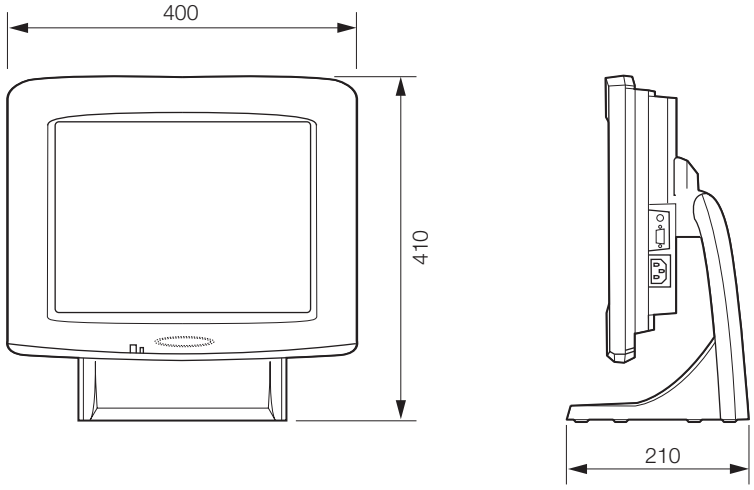
[Fig. A.3] Console Unit

(1) PC main unit and keyboard

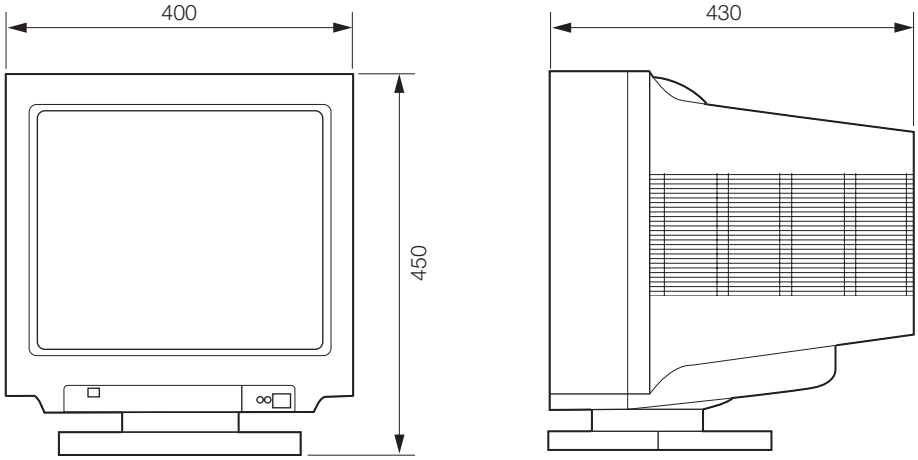
(Unit: mm)



(2) Display (LCD)



(3) Display (CRT)



Appendix **B**

IP Handling

1 IP Erasure Processing

1.1 Secondary Erasure

Even when stored in a room, an IP is very sensitive and absorbs and accumulates natural radioactivity such as cosmic rays or radiation energy emanating from radioisotopes contained in construction materials such as those used for floors and walls. Perform secondary erasure for IPs which have not been used that day.

For the detailed operation procedure, refer to Chapter 2, section 2.3, **Conducting Exposure Using a Cassette (IP) Left Unused for 8 Hours or More [SECONDARY ERASURE]**.

1.2 Primary Erasure

The following IPs must always be submitted to primary erasure prior to use for exposure.

(1) Over-exposed IP
(2) Incorrectly exposed IP

For the detailed operation procedure, refer to Chapter 2, section 2.4 and **Conducting Image Erasure Only [PRIMARY ERASURE]**.

2 Storage Conditions/Daily Maintenance

2.1 Storage Conditions

(1) Store IPs under the following environmental conditions.
Packed: Under 35˚C
Unpacked: Under 33˚C and 80% RH
(2) Store IPs in a place where they are not exposed to direct sunlight or excessive ultraviolet rays or various radioactive rays.
(3) Do not bend IPs or impose strong force on them.

2.2 Daily Maintenance

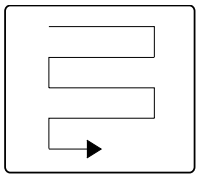
(1) Do not use damaged IPs because image diagnosis can be affected.
(2) Handle IPs as carefully as possible. Do not damage or stain IPs.
(3) Do not bend IPs, hit them against some other objects or drop on the floor or table.

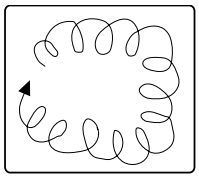
2.3 Cleaning

(1) Materials required
Lint free non-woven cotton
Gauze (100% cotton),
Lens cleaner such as Toraysee®

(2) Method

1 With a dry cloth of materials listed above, wipe off the IP surface as illustrated below (A or B).


A


B

2 For stains which fail to come off by cleaning with dry cleaning cloths, dampen the above cloth with ethanol anhydride (JIS standards or special standards) before cleaning. (Do not use another cleaning agent.)

When the IP surface has been cleaned using ethanol anhydride-dampened cloths, slightly wipe it off with dry cloths listed above. Make sure the surface of the IP is completely dry before use.

!! Frequent cleaning with ethanol anhydride can cause yellowing of the IP edges.

(3) Precautions

1 Be sure not to damage the IP.
2 Never use eraser or any other solvents.
3 Do not scratch the IP with your nails.

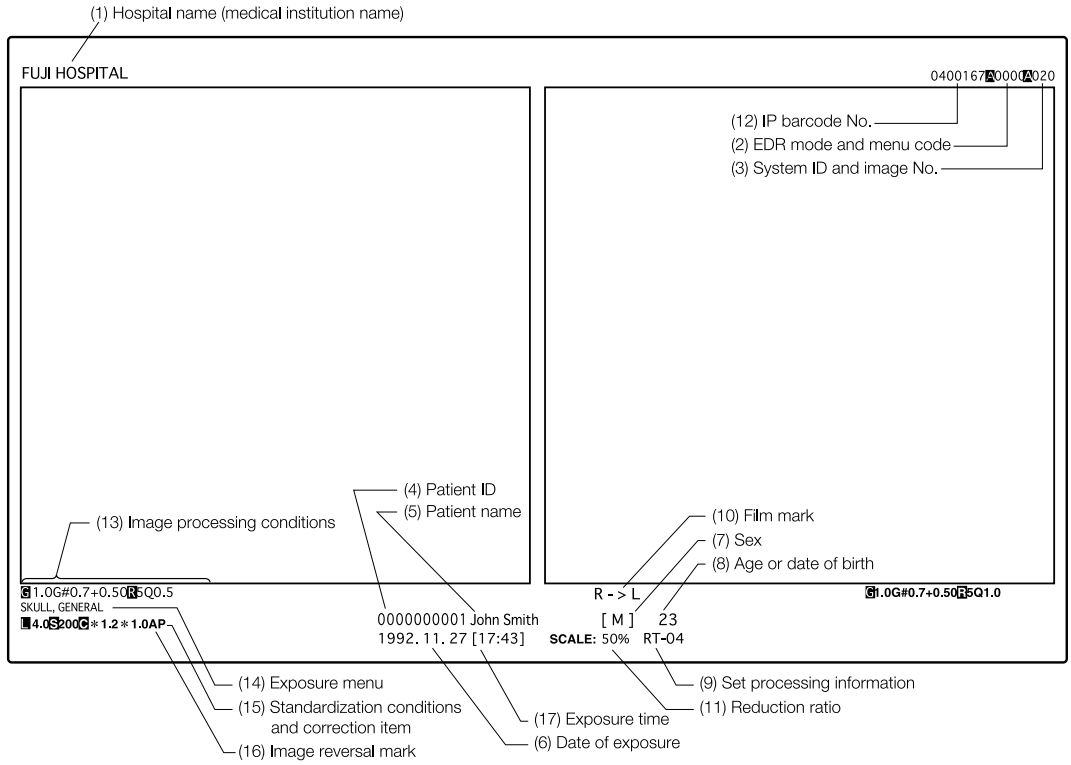
!! Do not apply light to the IP exposed but not yet processed.

Appendix **C**

Film Annotation

Basic layout of the film annotation printed on output film and the meanings are explained below.

[Fig. C.1] Initially Set Film Annotation



!! Character display position can differ slightly from the sample above.

[Table. C-1] Initially Set Film Annotaiton

Name	Meaning
(1) Hospital name (medical institution name)	The name of the hospital (or medical institution) will be displayed.
(2) EDR mode and menu code	The EDR mode and the menu code will be displayed. (* Only the menu code will be displayed in the Standard Film Annotation.)
(3) System ID and image No.	The system ID is an identification code particular to the Image Reader, which will be displayed in reverse video by one of the letters from A to Z. The image no. displayed in three digits represents a serial no. that indicates order of image reading of the day.
(4) Patient ID	The patient ID will be displayed.
(5) Patient name	The patient name will be displayed.
(6) Date of exposure	The date of exposure will be displayed.
(7) Sex	Female or male will be displayed.
(8) Age or date of birth	Either age or date of birth will be displayed.
(9) Set processing information	The batch processing information will be displayed.
(10) Film mark	The exposure direction will be displayed.
(11) Reduction ratio	The reduction ratio of the image will be displayed.
(12) IP barcode No.	The IP barcode No. will be displayed.
(13) Image processing conditions	The image processing conditions according to the selected exposure menu will be displayed.
(14) Exposure menu	The exposure menu will be displayed.
(15) Standardization conditions and correction item	The standardization conditions for latitude and system sensitivity will be displayed.
(16) Image reversal mark	Displayed when the image is reversed.
(17) Exposure time	The time when the IP has been registered at the CR Console (the time when the study has been started) will be displayed.

Appendix **Y**

Exposed Anatomical Regions/ Applicable Menus/Display Parameters

[Head 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0000	SKULL, GENERAL (PA)	Observation of the entire skull and facial bone, entire cerebral ventricles and paranasal sinus, and gnathic joint and Turkish saddle by the Towne projection and Caldwell method	
	1	0001	PARANASAL SINUS (PA)	Observation of the nasal cavity and its surroundings by the Waters method	
	1	0002	MANDIBLE (AP)	Observation of the mandible	
	1	0003	ORBIT (AP)	Observation of the orbit and optic canal	
	1	0004	HEAD, SOFT TISSUE (PA)	Observation of the cephalic soft part and mastoid process	
	1	0006	SKULL, PEDIATRICS (PA)	Observation of the entire skull of infants (3 or less years of age)	
	1	000B	EAR (AP)	Observation of the ear by the Schüler method, Sonnenkalb position, Stenvers projection, Meyer method, and other methods	
	1	000C	SKULL, AXIAL (AP)	Cephalic exposure by axial projection	
	1	000D	CEPHALOGRAPHY (AP)	Routine cephalic exposure	
	1	000E	ZYGO. (AP)	Exposure of the lateral portion of the zygomatic bone	
	1	001E	NASALAB. LAT (AP)	Exposure of the lateral portion of the nasal bone	
Contrast	1	1000	HEAD, BL. VESSEL :C (AP)	Cephalic blood vessel exposure with a contrast medium	
	1	1002	PARANASAL SINUS :C (AP)	Exposure with a contrast medium of the paranasal sinuses, the rhinopharynx and oropharynx, and the nasal cavity and nasolacrimal duct	
	1	1004	SALIVARY GLANDS :C (AP)	Parotic, sublingual, and sublingual gland exposure with a contrast medium	
Tomography	1	2000	PARANASAL SINUS :T (AP)	Tomography of paranasal sinus	
	1	2001	EAR :T (PA)	Tomography of inner and middle ear	
	1	2002	SELLA TURCICA :T (PA)	Tomography of turkish saddle	
	1	2003	MANDIBULAR JOINTT :T (AP)	Tomography of gnathic joint and mandible	

EDR mode						Display Parameter																		
Auto		Semi		Fix	Preset	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	5	Q	0.5	1.0	A	0.7	0.2	5	Q	7.0	1.0	G	0.7	0.5	5	Q	1.0
4S	II	II	2.2	200	A	1.2	G	0.7	0.3	6	T	0.5	0.9	A	0.6	0.0	6	T	5.0	1.2	G	0.9	0.3	6	T	0.5
4S	II	II	2.2	200	A	1.0	F	0.9	-0.1	5	T	0.5	0.9	A	0.9	-0.2	5	T	5.0	1.0	F	0.9	-0.1	5	T	0.5
4S	II	II	2.2	200	A	1.2	G	0.9	0.3	4	T	0.5	0.9	A	0.8	0.0	4	T	5.0	1.2	G	0.9	0.3	4	T	0.5
-	IV	II	2.6	200	A	1.0	G	2.0	-0.5	2	Q	0.5	1.0	A	2.1	-0.3	2	Q	3.0	1.0	G	2.0	-0.5	2	Q	0.5
4S	I	III	2.2	200	A	1.2	G	0.7	0.4	4	R	0.3	0.9	A	0.6	0.0	4	R	3.0	1.2	G	0.7	0.4	4	R	0.3
4S	II	II	2.2	200	A	1.2	H	0.9	0.4	4	T	0.5	0.9	A	0.7	0.1	4	T	5.0	1.0	H	0.9	0.4	4	T	1.0
4S	II	II	2.2	200	A	1.2	G	0.7	0.4	5	Q	0.5	1.0	A	0.7	0.1	5	Q	7.0	1.0	G	0.7	0.4	5	Q	1.0
4S	I	II	2.2	200	S	0.8	G	0.7	0.4	8	T	5.0	0.8	A	0.7	-0.1	8	T	15.0	0.8	G	0.7	0.4	8	T	5.0
-	IV	II	2.6	200	A	1.0	G	2.0	0.3	5	Q	0.5	1.0	A	2.1	0.3	5	Q	6.0	1.0	G	2.0	0.3	5	Q	0.5
-	IV	II	2.6	200	A	1.0	G	2.0	-0.5	5	Q	0.5	1.0	A	2.1	-0.3	5	Q	6.0	1.0	G	2.0	-0.5	5	Q	0.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.6	5	T	1.0	1.0	A	0.5	0.1	5	T	7.0	1.0	G	0.7	0.6	5	T	1.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	4	R	1.0	1.0	A	0.5	0.0	4	R	7.0	1.0	G	0.7	0.5	4	R	1.5
4S	II	II	2.2	200	A	1.2	G	0.7	0.1	5	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.0	G	0.7	0.1	5	R	1.5
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.5
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.0
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.0
4S	II	II	2.2	200	A	1.2	I	0.9	0.5	4	R	1.0	1.0	A	0.6	0.0	4	R	7.0	1.2	I	0.9	0.5	4	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Frequency Type (RT)
- Frequency Enhancement (RE)

[Head 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	2	0009	PANAGRAPHY (PA)	Panagraphy	
	2	0016	SKULL, PED. -1 (PA)	Tomography of the entire skull of infants by low-dose exposure	
Tomog-raphy	2	2004	PANTOMO. :T (PA)	Pantomography	
Magnifi-cation	2	6001	HEAD, MAG :M (PA)	Magnification and magnification tomography of the inner ear, auditory ossicle, and other organs with 3× or higher power	

EDR mode						Display Parameter																		
Auto		Semi		Fix	Preset	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
1	II	II	2.0	200	A	1.2	G	0.7	0.4	7	X	0.4	1.2	G	0.7	0.4	7	R	0.0	1.2	G	0.7	0.4	7	X	0.4
4	I	III	2.2	200	A	1.0	E	1.2	0.0	5	Q	0.5	1.0	A	1.3	0.0	5	Q	6.0	1.0	A	1.2	0.0	5	Q	6.0
1	II	II	2.2	200	A	1.1	E	1.2	0.2	7	Q	0.5	1.0	A	1.2	0.0	7	Q	3.0	1.2	A	1.2	0.0	7	Q	6.0
4	II	I	2.2	200	S	1.2	I	0.9	0.5	3	R	1.0	1.0	A	0.6	0.0	3	R	5.0	1.2	I	0.9	0.5	3	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Neck]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0100	CERVICAL, GENERAL (AP)	Exposure of the whole neck; observation of the neck from the cervical spine to soft parts Observation of the frontal portion of the pharynx and larynx	
	1	0101	CERVICAL SPINE (AP)	Observation of the cervical spine, except through open mouth	For exposure of cervico-thoracic spine, use the 0201 "THORACIC SPINE, FRN" or 0209 "THORACIC SPINE, LAT" menu.
	1	0102	PHARYNX/LARYNX (AP)	Observation of the lateral portion of the hypopharynx, larynx, and trachea, and thyroid gland	For exposure of the frontal portion, use the 0100 "CERVICAL, GENERAL" menu.
	1	0104	CERVIC. PEDIATRICS (AP)	General view of the neck of infants (3 years old or less)	
	1	0106	OPEN MOUTH (AP)	Observation through the open mouth	
Contrast	1	1100	CERVIC. BL, VESSEL :C (AP)	Cervical blood vessel exposure with a contrast medium	
	1	1101	PHARYNX/LARYNX :C (AP)	Larynx, hypopharynx, and thyroid gland exposure with a contrast medium	
	1	1102	CERVIC, ESOPHAGUS :C (AP)	Exposure of the neck from the hypopharynx to the upper portion of the esophagus with barium	
Tomography	1	2100	CERVICAL SPINE :T (AP)	Tomography of cervical spine	For tomography of the cervicothoracic spines, use the 2203 "THORA.SPINE, FRN" or 2204 "THORA SPINE, LAT" menu.
	1	2102	PHARYNX/LARYNX :T (AP)	Tomography of the hypopharynx, larynx, and upper portion of the trachea	
Plain	2	0105	LARYNX(<35KV) (AP)	Observation of the lateral portion of the neck with the thyroid gland as the target (exposure of soft parts with an MO bulb at 35 k V or lower)	
	2	0114	CERVIC., PED.-1 (AP)	General view of the neck of infants by low-dose exposure	
Contrast	2	1105	CERVICAL, MYELO. :C (AP)	Cervical spinal canal, extradural space, and intervertebral disc exposure with a contrast medium	
	2	1106	CERVICAL, LYMPHA :C (AP)	Cervical lymphatic duct and lymph node exposure with a contrast medium	
	2	1107	THORA CERVICAL, MYELO :C (AP)	Thoracic spinal canal and extradural space exposure with a contrast medium	
Magnifi-cation	2	4100	CERVIC., MAG :M (AP)	3× or more magnification of the pharynx, larynx, and other organs	

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	II	2.4	200	A	0.9	F	0.6	0.3	4	R	0.5	1.0	A	0.7	0.1	4	R	5.0	0.9	F	0.6	0.3	4	R	0.5
4S	II	II	2.4	200	A	1.1	F	0.6	0.5	5	P	0.5	1.0	A	0.5	0.1	5	P	5.0	1.1	F	0.6	0.5	5	P	0.5
4S	I	II	2.4	200	A	1.0	I	0.6	0.3	4	R	0.5	1.0	A	0.7	0.1	4	R	5.0	1.0	I	0.6	0.3	4	R	0.5
4S	I	III	2.4	200	A	1.3	F	0.7	0.0	4	R	0.3	0.9	A	0.6	0.0	4	R	3.0	1.3	F	0.7	0.0	4	R	0.3
4S	II	II	2.2	200	A	1.2	G	0.7	0.5	5	Q	0.5	1.0	A	0.7	0.2	5	Q	7.0	1.0	G	0.7	0.5	5	Q	1.0
4S	I	II	2.4	200	A	1.0	I	0.6	0.8	4	P	1.0	1.0	A	0.5	0.3	4	P	5.0	1.0	I	0.6	0.8	4	P	1.0
4S	I	II	2.4	200	A	1.0	I	0.6	0.4	4	R	1.0	1.0	A	0.7	0.2	4	R	5.0	1.0	I	0.6	0.4	4	R	1.0
4S	II	II	2.4	200	A	1.0	I	0.6	0.4	4	R	1.0	1.0	A	0.7	0.2	4	R	5.0	1.0	I	0.6	0.4	4	R	1.0
1S	II	II	2.4	200	A	1.2	I	0.6	0.5	3	Q	1.0	1.0	A	0.5	0.3	3	Q	5.0	1.0	I	0.6	0.5	3	Q	1.5
1S	I	II	2.6	200	A	1.2	I	0.6	0.4	3	Q	1.0	1.0	A	0.6	0.1	3	Q	5.0	1.0	I	0.6	0.4	3	Q	1.5
4S	I	II	2.4	200	A	1.0	I	2.0	-0.2	4	R	0.5	1.0	A	0.9	-0.1	4	R	5.0	1.0	I	2.0	-0.2	4	R	0.5
4S	I	III	2.4	200	A	1.3	F	0.7	0.0	7	X	0.4	1.3	F	0.7	0.0	7	R	0.0	1.3	F	0.7	0.0	7	X	0.4
4S	I	II	2.4	200	A	1.0	F	0.6	0.5	5	P	1.0	1.0	A	0.5	0.1	5	P	5.0	1.0	F	0.6	0.5	5	P	1.0
4S	I	II	2.4	200	A	1.0	I	0.6	0.5	4	P	1.0	1.0	A	0.3	-0.1	4	P	5.0	1.0	I	0.6	0.5	4	P	1.0
4S	I	II	2.4	200	A	1.0	F	0.6	0.5	5	P	1.0	1.0	A	0.5	0.1	5	P	5.0	1.0	F	0.6	0.5	5	P	1.0
4	II	I	2.4	200	S	1.0	I	2.0	0.3	3	R	1.0	1.0	A	1.9	0.4	3	R	5.0	1.0	I	2.0	0.3	3	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Chest 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0200	CHEST, GENERAL (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows	
	1	0201	THORA. SPINE, FRN (AP)	Observation of the thoracic and cervicothoracic spines	For exposure of the thoracolumbar spine, use the 0501 "LUMBAR SPINE" menu and for exposure of the lung, adjust the radiation field as small as double the size of the thoracic spine.
	1	0209	THORA. SPINE, LAT (AP)	Observation of the thoracic and cervicothoracic spine (this menu is used only when the enface radiogram is different in density from the oblique radiogram in particular)	For exposure of the cervicothoracic spine, use the 0501 "LUMBAR SPINE" menu.
	1	0202	UPPER RIB (AP)	Observation of the superior ribs	
	1	0203	LOWER RIB (PA)	Observation of the inferior ribs	
	1	0204	CLAVICLE (AP)	Observation of the clavicle	
	1	0205	SCAPULA (AP)	Observation of the scapula	
	1	0206	STERNUM (PA)	Observation of the sternum (manubrium, sternal body, and xiphoid process)	
	1	0207	CHEST, PEDIATRICS (AP)	Plain thoracic exposure in infants (3 or less years of age)	
	1	020A	CHEST, SOFT TISSUE (AP)	Exposure of thoracic soft parts; observation of the chest wall, axilla, and other sites	
	1	020B	SHOULDER JNT, FRN (AP)	Observation of the frontal and peripheral soft parts of the shoulder joint	Use a grid.
	1	020C	SHOULDER JNT, AXL (AP)	Observation of the frontal and peripheral soft parts of the shoulder joint	Use a curve cassette or make an exposure in the caudal direction.
	1	020D	WHOLE SPINE (AP)	Exposure of the whole spine of infants which can be recorded on a 14 x 17" IP	
Contrast	1	1200	CHEST, BL. VESSEL :C (AP)	Thoracic blood vessel exposure with a contrast medium	
	1	1201	BRONCHUS :C (AP)	Bronchial exposure with a contrast medium	
	1	1202	CHEST,ESOPHAGUS :C (AP)	Thoracic esophageal exposure with a contrast medium	
Tomography	1	2200	LUNG :T (AP)	Mainly tomography of the lung field; observation of the lung field and rib	
	1	2201	MEDIASTINUM :T (AP)	Mainly tomography of the mediastinum	

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	IV	2.2	200	A	1.0	E	1.6	-0.2	4	R	0.5	0.9	A	1.5	-0.2	4	R	5.0	0.8	E	1.6	-0.2	4	R	0.5
4S	II	II	2.2	200	A	1.1	G	0.9	0.6	5	T	1.0	1.0	A	0.7	0.2	5	T	5.0	1.1	G	0.9	0.6	5	T	1.0
4S	VI	II	2.2	200	A	1.0	G	0.9	0.1	5	T	1.0	1.0	A	1.0	0.0	5	T	5.0	1.0	G	0.9	0.1	5	T	1.0
4S	II	II	2.2	200	A	0.8	O	1.6	-0.2	5	R	1.0	0.9	A	1.6	-0.1	5	R	5.0	0.7	O	1.6	-0.2	5	R	1.5
4S	II	II	2.2	200	A	0.7	O	0.6	-0.1	5	R	1.0	1.0	A	0.8	0.0	5	R	5.0	0.7	O	0.6	-0.1	5	R	1.0
4S	II	II	2.2	200	A	1.0	F	0.6	0.0	5	T	1.0	0.9	A	0.9	0.0	5	T	5.0	1.0	F	0.6	0.0	5	T	1.0
4S	II	II	2.2	200	A	1.2	G	0.6	0.2	5	T	1.0	1.0	A	0.7	0.0	5	T	5.0	1.2	G	0.6	0.2	5	T	1.0
4S	II	II	2.2	200	A	1.0	O	1.6	0.0	5	R	1.0	0.9	A	1.4	-0.1	5	R	7.0	1.0	O	1.6	0.0	5	R	1.0
4S	VI	II	2.2	200	A	1.3	O	1.6	-0.35	3	R	0.0	1.0	A	1.5	-0.6	3	R	1.0	1.3	O	1.6	-0.35	3	R	0.0
-	IV	II	2.6	200	A	1.1	F	2.0	0.0	3	Q	1.0	0.7	A	1.6	-0.2	3	Q	7.0	1.1	F	2.0	0.0	3	Q	1.0
4S	VII	II	2.2	200	A	1.2	G	0.6	0.1	5	T	1.0	1.0	A	0.9	0.0	5	T	5.0	1.2	G	0.6	0.1	5	T	1.0
4S	VII	II	2.0	200	A	1.0	O	0.6	0.5	5	T	1.0	1.0	A	0.6	0.2	5	T	5.0	1.0	O	0.6	0.5	5	T	1.0
4S	II	II	2.2	200	A	1.2	G	0.9	0.6	5	T	1.0	1.2	A	0.9	0.2	5	T	5.0	1.0	G	0.9	0.6	5	T	1.5
4S	II	IV	2.2	200	A	1.0	E	1.6	0.2	5	T	1.0	0.9	A	1.3	0.0	5	T	5.0	1.0	E	1.6	0.2	5	T	1.0
4S	II	II	2.2	200	A	1.0	E	1.6	0.0	5	T	1.0	0.9	A	1.3	-0.2	5	T	5.0	1.0	E	1.6	0.0	5	T	1.0
1	II	II	2.2	200	A	1.0	N	0.3	0.1	8	T	1.0	1.0	A	0.7	0.0	8	T	7.0	1.0	N	0.3	0.1	8	T	1.0
1	II	IV	2.2	200	A	1.0	E	1.6	0.0	4	R	1.0	0.9	A	1.4	-0.1	4	R	7.0	1.0	E	1.6	0.0	4	R	1.0
1	II	II	2.2	200	A	1.0	E	1.6	0.4	4	R	1.0	0.9	A	1.3	0.1	4	R	7.0	1.0	E	1.6	0.4	4	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Chest 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Tomography	1	2202	STERNUM :T (AP)	Sternal tomography	
	1	2203	THORA. SPINE, FRN :T (AP)	Thoracic spinal tomography	For tomography of the cervicothoracic spines, use the 2500 "LUMBAR SPINE" menu.
	1	2204	THORA, SPINE, LAT :T (AP)	Thoracic spinal tomography (this menu is used when the enface radiogram is different in density from the oblique radiogram)	For tomography of the cervicothoracic spines, use the 2500 "LUMBAR SPINE" menu.
	1	2205	SHOULDER JOINT :T (AP)	Tomography of the shoulder joint and its periphery brachial region	
Plain	2	0210	CHEST, SPECIAL-1 (PA)	For pneumoconiosis diagnosis	Load the system with the display parameters usually considered appropriate for coniosis staging.
	2	0220	CHEST, SPECIAL-2 (PA)	For mass radiography	Load the system with the display parameter considered fit for screening.
	2	0217	CHEST, PED.-1 (AP)	Low-dose plain thoracic exposure in infants	
	2	020E	CHEST, GENERAL-2 (PA)	Observation of a thin shadow in the lung field (infiltrative alveolar shadow)	
	2	020F	CHEST, PORTABLE (AP)	Observation of chest for prognosis	
	2	0211	THORA. SPINE, OBL (PA)	Observation of thoracic spine in oblique radiogram	
Contrast	2	1205	CHEST, MYELO., FRN :C (AP)	Exposure with a contrast medium of the spinal canal and intervertebral discs of the thoracic spine	
	2	1206	CHEST, LYMPHA, FRN :C (AP)	Thoracic lymphatic duct and lymph node exposure with a contrast medium	
	2	1204	CHEST, MYELO., LAT :C (AP)	Exposure with a contrast medium of the spinal canal and intervertebral discs of the thoracic spine (this menu is used when the enface radiogram is different in density from the oblique radiogram)	
	2	1207	CHEST, LYMPHA, LAT :C (AP)	Thoracic lymphatic duct and lymph node exposure with a contrast medium (this menu is used when the enface radiogram is different in density from the oblique radiogram)	
	2	1208	SHLD, JNT, ARTHRO :C (AP)	Shoulder joint exposure with a contrast medium	Use a grid.
Magnification	2	4208	CHEST, MAG :M (AP)	3× or more magnification of the lung field, thoracic lymphoduct, and other sites	

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
1	II	II	2.2	200	A	1.0	E	1.6	0.4	4	R	1.0	0.9	A	1.3	0.1	4	R	7.0	1.0	E	1.6	0.4	4	R	1.0
1	II	II	2.2	200	A	1.1	G	0.9	0.6	4	T	1.0	1.0	A	0.7	0.2	4	T	7.0	1.1	G	0.9	0.6	4	T	1.0
1	II	II	2.2	200	A	1.0	G	0.9	0.1	4	T	1.0	1.0	A	1.0	0.0	4	T	7.0	1.0	G	0.9	0.1	4	T	1.0
1	II	II	2.2	200	A	1.0	O	0.6	0.4	3	T	1.0	1.0	A	0.6	0.0	3	T	5.0	1.0	O	0.6	0.4	3	T	1.0
4S	II	IV	2.2	200	A	1.0	E	1.6	-0.2	4	R	0.3	-0.9	A	0.5	-1.15	4	R	0.5	1.1	E	1.6	-0.2	4	R	0.3
4S	II	IV	2.2	200	A	1.0	E	1.6	-0.2	0	R	0.5	0.9	A	1.5	-0.2	0	R	3.0	0.8	E	1.6	-0.2	0	R	0.5
4S	II	II	2.2	200	A	1.0	D	1.6	-0.3	7	X	0.4	1.0	D	1.6	-0.3	7	R	0.0	1.0	D	1.6	-0.3	7	X	0.4
4S	II	IV	2.2	200	A	1.0	P	1.6	0.0	4	R	0.2	0.9	A	1.5	-0.2	4	R	5.0	1.0	P	1.6	0.0	9	R	0.5
-	IV	IV	2.2	200	A	1.2	E	1.6	-0.2	4	R	0.5	1.0	E	1.6	-0.3	4	R	5.0	1.2	E	1.6	-0.2	4	R	0.5
4S	II	II	2.2	200	A	1.1	G	0.9	0.4	4	T	1.0	1.0	A	0.7	0.1	4	T	7.0	1.1	G	0.9	0.4	4	T	1.0
4S	II	II	2.2	200	A	1.1	G	0.9	0.6	5	T	1.0	1.0	A	0.7	0.2	5	T	5.0	1.1	G	0.9	0.6	5	T	1.0
4S	II	II	2.2	200	A	1.1	G	0.9	0.6	5	T	1.0	1.0	A	0.7	0.2	5	T	5.0	1.1	G	0.9	0.6	5	T	1.0
4S	II	II	2.2	200	A	1.0	G	0.9	0.1	5	T	1.0	1.0	A	1.0	0.0	5	T	5.0	1.0	G	0.9	0.1	5	T	1.0
4S	II	II	2.2	200	A	1.0	G	0.9	0.1	5	T	1.0	1.0	A	1.0	0.0	5	T	5.0	1.0	G	0.9	0.1	5	T	1.0
4S	II	II	2.2	200	A	1.2	G	0.6	0.25	5	T	1.0	1.0	A	0.9	0.0	5	T	5.0	1.2	G	0.6	0.25	5	T	1.0
4	II	II	2.0	200	S	1.2	E	1.6	-0.2	3	R	1.0	0.9	A	1.5	-0.2	3	R	5.0	1.0	E	1.6	-0.2	3	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Breast]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0300	BREAST (AP)	Observation of the whole breast Available for other exposures including spot exposure	Use the Mo bulb.
	1	0302	BREAST-CHEST WALL (AP)	Observation of the breast including the chest wall or small breasts such as male breast	Use the Mo bulb.
Contrast	1	1300	LACTIFEROUS DUCT :C (AP)	Exposure of lactiferous duct with a contrast medium	
Plain	2	0301	BREAST, SPOT (AP)	Spot exposure of the breast (this menu is used for spot exposure only)	
	2	0303	BREAST-CHEST WALL-2 (AP)	Observation of breast-chest wall when collimation stand is used	
	2	0304	BREAST :W (AP)	Observation of the whole breast Tungsten bulb is used.	For the tungsten bulb
	2	0305	BREAST-CHEST WALL :W (AP)	Observation of the breast including the chest wall or small breasts such as male breast Tungsten bulb is used.	For the tungsten bulb
Contrast	2	1301	LACTEAL CYST :C (AP)	Mammary cyst exposure with a contrast medium	
Magnification	2	4300	BREAST, MAG :M (AP)	3× or more magnification of the breast	

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
2	I	I	1.8	40	A	1.2	G	0.6	0.3	5	P	1.0	1.0	A	0.6	0.0	5	P	3.0	1.2	G	0.6	0.3	5	P	1.0
-	IV	I	2.6	40	A	1.2	G	0.6	0.3	5	P	1.0	1.0	A	0.6	0.0	5	P	3.0	1.2	G	0.6	0.3	5	P	1.0
2	I	I	1.8	40	A	1.2	G	0.6	0.3	5	P	1.0	1.0	A	0.6	0.0	5	P	3.0	1.2	G	0.6	0.3	5	P	1.0
2	I	I	1.8	40	F	1.2	G	0.6	0.3	5	P	1.0	1.0	A	0.6	0.0	5	P	3.0	1.2	G	0.6	0.3	5	P	1.0
2	I	I	2.6	40	A	0.8	G	2.6	0.0	5	P	1.0	1.0	A	2.6	0.0	5	P	3.0	0.8	G	2.6	0.0	5	P	1.0
2	I	I	1.8	40	A	1.2	G	0.6	0.3	5	P	1.0	1.0	A	0.6	0.0	5	P	3.0	1.2	G	0.6	0.3	5	P	1.0
2	I	I	2.6	40	A	1.2	G	0.6	0.3	5	P	1.0	1.0	A	0.6	0.0	5	P	3.0	1.2	G	0.6	0.3	5	P	1.0
2	I	I	1.8	40	A	1.2	G	0.6	0.3	5	P	1.0	1.0	A	0.6	0.0	5	P	3.0	1.2	G	0.6	0.3	5	P	1.0
2	I	I	1.8	40	F	1.2	G	0.6	0.3	4	P	1.0	-0.7	A	1.1	0.5	4	P	5.0	1.2	G	0.6	0.3	4	P	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Abdomen]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0400	ABDOMEN, GENERAL (AP)	Plain abdominal exposure; observation of the whole abdomen; thoracicoabdominal exposure	
	1	0402	ABDOM., PEDIATRICS (AP)	Observation of the abdomen and pelvic part of infants (3 years old or less); thoracicoabdomimal exposure in infants	
	1	0403	ABDOM., SOFT TISS. (AP)	Observation of abdominal soft parts	
Contrast	1	1400	ABDOM., BL. VESSEL :C (AP)	Abdominal blood vessel exposure with a contrast medium	
	1	1401	STOMACH :C (AP)	Gastric exposure with a contrast medium by filling, compression, double-contrast, and relief methods	
	1	1402	INTESTINE :C (AP)	Large and small intestine exposure by the barium enema and barium meal methods	
	1	1403	IVP :C (AP)	Venous, intravenous drip type, and retrograde pyelography	
	1	1404	GALL./PAN.DUCT :C (AP)	Venous cholangiography, intravenous drip type cholagiography, oral cholecystography, PTC, and ERCP	
Tomography	1	3400	GALLBLADDER :T (AP)	Visualization tomography of the gallbladder	
	1	3401	KIDNEY :T (AP)	Visualization tomography of the renal pelvis	
Plain	2	0412	ABDOM., PED. -1 (AP)	Low-dose exposure of the abdomen, pelvic part, and thoracicoabdominal part of infants	
Contrast	2	1405	ABDOMEN, MYELO :C (AP)	Spinal canal and intervertebral disc exposure with a contrast medium	
	2	1406	ABDOMEN, LYMPHA :C (AP)	Abdominal lymphatic duct and lymph node exposure with a contrast medium	
Magnifi-cation	2	5406	ABDOMEN, MAG :M (AP)	3× or more magnification of the abdominal lymphatic duct, bones, and other organs	

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	1.0	0.9	A	0.7	0.0	3	Q	5.0	0.9	D	0.6	0.2	3	Q	1.5
4S	II	II	2.0	200	A	1.2	D	1.6	0.25	3	R	0.0	1.2	A	1.6	0.25	3	R	3.0	1.2	D	1.6	0.25	3	R	0.0
-	IV	II	2.6	200	A	1.1	F	2.0	0.0	3	Q	1.0	0.7	A	1.6	-0.2	3	Q	7.0	1.1	F	2.0	0.0	3	Q	1.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.4	5	T	1.0	0.9	A	0.5	0.0	5	T	5.0	1.1	D	0.6	0.4	5	T	1.0
1S	III	II	2.0	200	A	1.0	N	0.3	0.3	8	T	1.0	1.0	A	0.5	0.2	8	T	7.0	1.0	N	0.3	0.3	8	T	1.0
1S	III	II	2.0	200	A	1.0	N	0.3	0.1	8	T	1.0	1.0	A	0.5	0.0	8	T	7.0	1.0	N	0.3	0.1	8	T	1.0
4S	II	II	2.0	200	A	1.0	D	0.6	0.4	4	T	1.0	0.9	A	0.6	0.2	4	T	7.0	1.0	D	0.6	0.3	4	T	1.0
4S	II	II	2.0	200	A	1.2	D	0.6	0.2	4	T	1.0	1.0	A	0.7	0.0	4	T	5.0	1.2	D	0.6	0.2	4	T	1.0
1	II	II	2.0	200	A	1.2	J	0.6	0.3	4	Q	1.0	1.0	A	0.6	0.0	4	Q	7.0	1.0	J	0.6	0.3	4	Q	1.5
1	II	II	2.0	200	A	1.2	F	0.6	0.3	4	Q	1.0	1.0	A	0.6	0.0	4	Q	7.0	1.0	F	0.6	0.3	4	Q	1.5
4S	II	II	2.0	200	A	1.2	D	1.6	0.25	7	X	0.4	1.2	A	1.6	0.25	7	R	0.0	1.2	D	1.6	0.25	7	X	0.4
4S	II	II	2.0	200	A	1.1	O	0.9	0.4	5	T	1.0	1.0	A	1.0	0.1	5	T	5.0	1.1	O	0.9	0.4	5	T	1.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.4	5	T	1.0	0.9	A	0.5	0.0	5	T	5.0	1.1	D	0.6	0.4	5	T	1.0
4	II	I	2.0	200	S	1.1	D	0.6	0.4	4	R	1.0	0.9	A	0.5	0.0	4	T	5.0	1.1	D	0.6	0.4	4	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Pelvis 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0500	PELVIS, GENERAL (AP)	Observation of the pelvis, ilium, and peripheral soft parts	
	1	0501	LUMBAR SPINE (AP)	Observation of the lumbar and thoracolumbar spine	
	1	0502	SACRUM/COCCYX (AP)	Observation of the sacrum and coccyx	
	1	0503	UTERUS, PREGNANCY (AP)	Exposure of fetus and placenta	
	1	0504	PELVIMETRY (AP)	Measurement of the pelvic dimensions or proportions	
	1	0506	PELVIS, PEDIATRICS (AP)	Observation of the pelvis and peripheral soft parts of infants (3 years old or less)	
	1	0507	LUMB., SOFT TISSUE (AP)	Observation of soft parts of the abdomen, kidney, and other organs	
	1	0508	HIP JOINT (AP)	Observation of the hip joint (Use the FIX MODE when protector is used.)	
	1	050A	HIP J., PEDIATRICS (AP)	Observation of the hip joint of infants- 3 or less years of age. (Use the FIX MODE when protector is used.)	
Contrast	1	1500	PELVIS, BL. VESSEL :C (AP)	Pelvic blood vessel exposure with a contrast medium	
	1	1501	URINARY ORGAN :C (AP)	Urinary bladder and urethra exposure with a contrast medium	
Tomography	1	2500	LUMBAR SPINE :T (AP)	Tomography of the lumbar and thoracolumbar spine	
	1	2501	SACRUM :T (AP)	Tomography of the sacrum	
	1	2502	HIP JOINT :T (AP)	Tomography of the hip joint and femoral region	
Plain	2	0516	PELVIS, PED.-1 (AP)	Low-dose exposure of the pelvis and peripheral soft parts of infants	
	2	051A	HIP J., PED.-1 (AP)	Low-dose infantile hip joint exposure (Use the FIX MODE when protector is used.)	
	2	050C	HIP JOINT, AXL (AP)	Observation of the hip joint by axial projection	

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.0	200	A	0.9	O	0.6	0.2	4	T	1.0	1.0	A	0.6	-0.2	4	T	5.0	0.9	O	0.6	0.2	4	T	1.0
4S	II	II	2.0	200	A	1.1	O	0.9	0.4	5	T	1.0	1.0	A	0.9	0.1	5	T	5.0	1.1	O	0.9	0.4	5	T	1.0
4S	II	II	2.0	200	A	0.9	O	0.9	0.2	5	T	1.0	1.0	A	1.2	0.1	5	T	5.0	0.9	O	0.9	0.2	5	T	1.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	1.0	0.9	A	0.7	0.0	3	Q	5.0	1.1	D	0.6	0.2	3	Q	1.0
4S	II	II	2.0	200	A	1.1	D	0.6	0.2	3	Q	1.0	0.9	A	0.7	0.0	3	Q	5.0	1.1	D	0.6	0.2	3	Q	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	5	R	0.3	0.9	A	1.2	-0.2	5	R	3.0	1.3	D	1.6	0.2	5	R	0.3
-	IV	II	2.6	200	A	1.1	F	2.0	0.0	3	Q	1.0	0.7	A	1.6	-0.2	3	Q	7.0	1.1	F	2.0	0.0	3	Q	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.4	5	R	0.5	0.9	A	1.6	0.0	5	R	5.0	1.3	D	1.6	0.4	5	R	0.5
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	5	R	0.3	0.9	A	1.2	-0.2	5	R	3.0	1.3	D	1.6	0.2	5	R	0.3
4S	II	II	2.0	200	A	0.9	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.9	O	0.6	0.5	4	T	1.0
4S	II	II	2.0	200	A	1.2	D	0.6	0.3	4	T	1.0	1.0	A	0.6	0.0	4	T	7.0	1.2	D	0.6	0.3	4	T	1.0
1	II	II	2.0	200	A	1.1	O	0.9	0.4	4	Q	1.0	1.0	A	0.9	0.1	4	Q	7.0	1.1	O	0.9	0.4	4	Q	1.0
1	II	II	2.0	200	A	1.1	O	0.9	0.8	4	Q	1.0	1.0	A	0.9	0.5	4	Q	7.0	1.1	O	0.9	0.8	4	Q	1.0
1	II	II	2.0	200	A	1.0	O	0.6	0.5	3	T	1.0	1.0	A	0.6	0.1	3	T	5.0	1.0	O	0.6	0.5	3	T	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	7	X	0.4	1.3	D	1.6	0.2	7	R	0.0	1.3	D	1.6	0.2	7	X	0.4
4S	II	II	2.0	200	A	1.3	D	1.6	0.2	7	X	0.4	1.3	D	1.6	0.2	7	R	0.0	1.3	D	1.6	0.2	7	X	0.4
-	V	II	2.0	200	A	0.8	O	0.6	-0.2	5	T	1.0	0.8	O	0.6	0.4	5	T	1.0	0.8	O	0.6	-0.2	5	T	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Frequency Type (RT)
- Frequency Enhancement (RE)

[Pelvis 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Contrast	2	1502	HYSTERO. :C (AP)	Uterus and salpinx exposure with a constrast medium	
	2	1503	SEMI. VES., VAS. :C (AP)	Seminal vesicle and seminal duct exposure with a contrast medium	
	2	1505	PELVIS, MYELO. :C (AP)	Pelvic spinal canal, extradural space, and intervertebral disc exposure with a contrast medium	
	2	1506	PELVIS, LYMPHA :C (AP)	Pelvic lymphatic duct and lymph node exposure with a contrast medium	
	2	1507	HIP JNT, ARTHRO. :C (AP)	Hip joint exposure with a contrast medium	
Magnifi-cation	2	5506	PELVIS, MAG :M (AP)	3× or more magnification of the pelvic lymphatic duct, bone, and other organs	

EDR mode						Display Parameter																		
Auto		Semi		Fix	Preset	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	II	II	2.0	200	A	1.2	D	0.6	0.3	4	T	1.0	1.0	A	0.6	0.0	4	T	7.0	1.2	D	0.6	0.3	4	T	1.0
4S	II	II	2.0	200	A	1.2	D	0.6	0.3	4	T	1.0	1.0	A	0.6	0.0	4	T	7.0	1.2	D	0.6	0.3	4	T	1.0
4S	II	II	2.0	200	A	1.1	O	0.9	0.4	5	T	1.0	1.0	A	1.0	0.1	5	T	5.0	1.1	O	0.9	0.4	5	T	1.0
4S	II	II	2.0	200	A	0.9	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.9	O	0.6	0.5	4	T	1.0
4S	II	II	2.0	200	A	1.3	D	1.6	0.5	4	T	1.0	0.9	A	1.6	0.0	4	T	5.0	1.3	D	1.6	0.5	4	T	1.0
4	II	I	2.0	200	S	0.9	O	0.6	0.5	5	R	1.0	1.0	A	0.5	0.0	5	T	5.0	0.9	O	0.6	0.5	5	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Frequency Type (RT)
- Frequency Enhancement (RE)

[Upper Extremity 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0600	UP. ARM/ELBOW JNT (AP)	Observation of the humerus, its soft part, and the elbow joint	
	1	0601	FO. ARM/WRIST JNT (AP)	Observation of the antebrachial bone, its soft part, and the wrist joint	
	1	0603	UP. ARM. SOFT TISS. (AP)	Observation of the brachial soft part as the main target	
	1	0605	FO. ARM, SOFT TISS. (AP)	Observation of the antebrachial soft part as the main target	
	1	0606	HAND (AP)	Observation of the metacarpal bone and peripheral soft parts	
	1	0607	FINGER (AP)	Observation of the phalanges and peripheral soft parts	
	1	0608	ARM, PEDIATRICS (AP)	Observation of the arm of infants (3 years old or less)	
	1	0609	HAND, PEDIATRICS (AP)	Observation of the hand of infants (3 years old or less)	
	1	060B	UP. EXTREMITY, AXL (AP)	Elbow joint and carpal tunnel exposure by axial projection	
Contrast	1	1600	UP. ARM, BL. VESSEL :C (AP)	Brachial blood vessel exposure with a contrast medium	
	1	1601	FO. ARM, BL. VESSEL :C (AP)	Antebrachial blood vessel exposure with a contrast medium	
	1	1602	HAND, BL. VESSEL :C (AP)	Hand blood vessel exposure with a contast medium	
Tomog-raphy	1	2601	ELBOW JOINT :T (AP)	Elbow joint tomography	
Contrast	2	1610	UPPER ARM, LYMPHA :C (AP)	Brachial lymphatic duct and lymph node exposure with a contrast medium	
	2	1611	FORE ARM, LYMPHA :C (AP)	Antebrachial lymphatic duct and lymph node exposure with a contrast medium	
	2	1612	HAND, LYMPHA :C (AP)	Exposure with a contrast medium of the lymphatic duct and lymph node in the hand	
	2	1620	ELBOW JNT, ARTHRO :C (AP)	Elbow joint exposure with a contrast medium	
	2	1622	WRIST JNT, ARTHRO :C (AP)	Exposure of the joint of the hand with a contrast medium	

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	III	2.0	200	A	1.0	O	0.6	0.4	5	T	0.5	1.0	A	0.6	0.0	5	T	5.0	0.8	O	0.6	0.4	5	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.2	5	T	0.5	1.0	A	0.8	0.0	5	T	5.0	0.8	O	0.6	0.2	5	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.4	3	T	0.5	1.0	A	0.6	0.0	3	T	5.0	1.0	O	0.6	0.4	3	T	0.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.2	3	T	0.5	1.0	A	0.6	0.0	3	T	5.0	1.0	O	0.6	0.2	3	T	0.5
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	5	T	0.5	0.9	A	0.6	0.2	5	T	5.0	0.9	O	0.6	0.5	5	T	0.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.3	5	T	0.5	0.9	A	0.7	0.1	5	T	5.0	0.9	O	0.6	0.3	5	T	0.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	5	T	0.3	1.0	A	0.6	0.1	5	T	3.0	1.0	O	0.6	0.5	5	T	0.3
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	5	T	0.3	0.9	A	0.7	0.1	5	T	3.0	0.8	O	0.6	0.4	5	T	0.3
-	IV	III	2.0	200	A	1.1	F	2.0	0.0	5	T	1.0	0.7	A	1.6	-0.2	5	T	7.0	1.1	F	2.0	0.0	5	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.3	4	T	1.0	1.0	A	0.7	0.0	4	T	5.0	0.8	O	0.6	0.3	4	T	1.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.6	4	T	1.0	0.9	A	0.7	0.2	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
1	I	III	2.0	200	A	1.0	O	0.6	0.4	5	T	1.0	1.0	A	0.6	0.0	5	T	5.0	0.9	O	0.6	0.4	5	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	4	T	1.0	1.0	A	0.5	0.0	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.3	4	T	1.0	1.0	A	0.7	0.0	4	T	5.0	0.8	O	0.6	0.3	4	T	1.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.6	4	T	1.0	0.9	A	0.7	0.2	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.4	3	T	1.0	1.0	A	0.6	0.3	3	T	5.0	0.8	O	0.6	0.4	3	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.2	3	T	1.0	1.0	A	0.8	0.0	3	T	5.0	0.8	O	0.6	0.2	3	T	1.5

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Upper Extremity 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Magnification	2	4607	UP. EXTREMITY, MAG :M (AP)	3× or more magnification of the phalanges and other bones	

EDR mode						Display Parameter																		
Auto		Semi		Fix	Preset	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4	I	II	2.0	200	S	1.1	I	0.6	0.3	5	R	1.0	0.9	A	0.7	0.1	5	R	5.0	1.1	I	0.6	0.3	5	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Frequency Type (RT)
- Frequency Enhancement (RE)

[Lower Extremity 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0700	THIGH/KNEE JOINT (AP)	Observation of the femoral bone, soft tissues and the knee (It should be noted however that knee joint observation by axial projection is excluded.)	
	1	0701	LOWER LEG (AP)	Observation of the crural bone and soft part	
	1	0703	THIGH, SOFT TISS. (AP)	Observation of the femoral soft part as the main target	
	1	0705	LO. LEG, SOFT TISS. (AP)	Observation of the crural soft part as the main target	
	1	0706	FOOT (AP)	Observation of the foot, articulation, tarsal bone, and calcaneus by axial projection	
	1	0707	TOE (AP)	Observation of the toe and phalanges	
	1	0708	LEG. PEDIATRICS (AP)	Observation of the lower extremities of infants (3 years old or less)	
	1	0709	FOOT, PEDIATRICS (AP)	Observation of the foot of infants (3 years old or less)	
	1	070B	PATELLA, AXIAL (AP)	Patellar exposure by axial projection	
Contast	1	1700	THIGH, BL. VESSEL :C (AP)	Femoral blood vessel exposure with a contrast medium	
	1	1701	LO. LEG, BL. VESSEL :C (AP)	Crural blood vessel exposure with a contrast medium	
	1	1702	FOOT, BL. VESSEL :C (AP)	Foot blood vessel exposure with a contrast medium	
Tomography	1	2701	KNEE JOINT :T (AP)	Knee joint tomography	
	1	2702	ANKLE JOINT :T (AP)	Ankle joint tomography	
Contrast	2	1710	THIGH, LYMPHA :C (AP)	Femoral lymphatic duct and lymph node exposure with a contrast medium	
	2	1711	LOWER LEG, LYMPHA :C (AP)	Crural lymphatic duct and lymph node exposure with a contrast medium	
	2	1712	FOOT, LYMPHA :C (AP)	Exposure of the lymphatic duct and lymph node of the foot with a contrast medium	
	2	1720	KNEE JNT, ARTHRO :C (AP)	Knee joint exposure with a contrast medium	

EDR mode						Display Parameter																		
Auto		Semi		Fix	Preset	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	5	F	0.5	1.0	A	0.6	0.1	5	T	5.0	0.8	O	0.6	0.5	5	F	0.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.4	5	F	0.5	1.0	A	0.7	0.1	5	T	5.0	0.8	O	0.6	0.4	5	F	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	3	T	0.5	1.0	A	0.6	0.1	3	T	5.0	1.0	O	0.6	0.5	3	T	0.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.4	3	T	0.5	1.0	A	0.7	0.1	3	T	5.0	0.9	O	0.6	0.4	3	T	0.5
4S	VI	III	2.0	200	A	0.8	O	0.6	0.3	5	T	0.5	0.8	A	1.0	0.1	5	T	5.0	0.8	O	0.6	0.3	5	T	0.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.0	5	T	0.5	0.9	A	0.9	-0.1	5	T	5.0	0.9	O	0.6	0.0	5	T	0.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	5	T	0.3	1.0	A	0.6	0.1	5	T	3.0	1.0	O	0.6	0.5	5	T	0.3
4S	I	III	2.0	200	A	0.8	O	0.6	0.3	5	T	0.3	0.9	A	0.7	0.0	5	T	3.0	0.8	O	0.6	0.3	5	T	0.3
-	IV	III	2.6	200	A	1.1	F	2.0	0.0	5	T	1.0	0.7	A	2.0	-0.5	5	T	7.0	1.1	F	2.0	0.0	5	T	1.0
4S	I	III	2.0	200	A	1.0	O	0.6	0.6	4	T	1.0	1.0	A	0.5	0.1	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
4S	I	III	2.0	200	A	0.9	O	0.6	0.5	4	T	1.0	1.0	A	0.6	0.1	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	4	T	1.0	0.8	A	1.0	0.1	4	T	5.0	0.7	O	0.6	0.4	4	T	1.5
1	I	III	2.0	200	A	1.0	O	0.6	0.4	5	T	1.0	1.0	A	0.6	0.1	5	T	5.0	0.9	O	0.6	0.4	5	T	1.5
1	I	III	2.0	200	A	0.8	O	0.6	0.3	5	T	1.0	0.8	A	1.0	0.1	5	T	5.0	0.7	O	0.6	0.3	5	T	1.5
4S	II	III	2.0	200	A	1.0	O	0.6	0.6	4	T	1.0	1.0	A	0.5	0.1	4	T	5.0	0.8	O	0.6	0.6	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	4	T	1.0	1.0	A	0.6	0.1	4	T	5.0	0.8	O	0.6	0.5	4	T	1.5
4S	I	III	2.0	200	A	0.8	O	0.6	0.4	4	T	1.0	0.8	A	1.0	0.1	4	T	5.0	0.7	O	0.6	0.4	4	T	1.5
4S	I	III	2.0	200	A	1.0	O	0.6	0.5	3	T	1.0	1.0	A	0.6	0.1	3	T	5.0	0.8	O	0.6	0.5	3	T	1.5

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Frequency Type (RT)
- Frequency Enhancement (RE)

[Lower Extremity 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Contrast	2	1722	ANKLE JNT, ARTHRO :C (AP)	Ankle joint exposure with a contrast medium	
	2	071B	PATL. AXL., ARTHRO :C (AP)	Exposure of patellar with a contrast medium by axial projection	
Magnification	2	4707	LO. EXTREMITY, MAG :M (AP)	3× or more magnification of the toe and other sites	

EDR mode						Display Parameter																		
Auto		Semi		Fix	Preset	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
4S	I	III	2.0	200	A	0.9	O	0.6	0.4	3	T	1.0	1.0	A	0.6	0.1	3	T	5.0	0.8	O	0.6	0.4	3	T	1.5
-	IV	III	2.6	200	A	1.1	F	2.0	0.0	3	T	1.0	0.7	A	2.0	-0.5	3	T	7.0	1.1	F	2.0	0.0	3	T	1.0
4	I	II	2.0	200	S	1.1	I	0.6	-0.1	5	R	1.0	0.9	A	1.0	0.0	5	R	5.0	1.1	I	0.6	-0.1	5	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Frequency Type (RT)
- Frequency Enhancement (RE)

[Test 1]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
	1	0900	SENSITIVITY		
	1	0901	SHARPNESS		
	1	0902	LINEARITY		
	1	0903	IMAGE-FORMAT		
	1	0904	CONTRAST		
	1	0905	MAX 0.5		
	1	0906	MAX 1.0		
	1	0907	MAX 2.0		
	1	0908	MAX 3.0		
	1	0909	MAX 4.0		
	1	090A	AVE 0.5		
	1	090B	AVE 1.0		
	1	090C	AVE 2.0		
	1	090D	AVE 3.0		
	1	090E	AVE 4.0		
	1	5900	AVE5CT08	This is to output images in 0.8 (GT:A) of density for Semi III (CT).	Auto V (Dmin = 1.0) using the Type II S_2 in the Auto Mode.
	1	5901	AVE5RT08	This is to output images in 0.8 (GT:A) of density for Semi III (RT).	Auto V (Dmin = 0.4) using the Type II S_2 in the Auto Mode.
	1	5902	AVE5RM08	This is to output images in 0.8 (GT:A) of density for Semi III (RM).	Auto V (Dmin = 0.2) using the Type II S_2 in the Auto Mode.

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	3.0	200	F	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	5.0
-	V	I	2.0	200	S	1.3	C	1.2	0.0	3	R	0.0	1.3	C	1.2	0.0	3	R	3.0	1.3	C	1.2	0.0	3	R	0.0
-	IV	I	0.5	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	IV	I	1.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	IV	I	2.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	IV	I	3.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	IV	I	4.0	200	A	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	0.5	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	1.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	2.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	3.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	V	I	4.0	200	S	1.0	A	1.2	0.0	3	F	0.0	1.0	A	1.2	0.0	3	F	5.0	1.0	A	1.2	0.0	3	F	0.0
-	V	III(CT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	V	III(RT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	V	III(RM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0

Gradation Processing
- Rotation Amount (GA)
- Gradation Type (GT)
- Rotation Center (GC)
- Gradation Shifting Amount (GS)

Frequency Processing
- Frequency Rank (RN)
- Frequency Type (RT)
- Frequency Enhancement (RE)

[Test 2]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
	1	5903	AVE5RB08	This is to output images in 0.8 (GT:A) of density for Semi III (RB).	Auto V (Dmin = 0.0) using the Type II S_2 in the Auto Mode.
	1	5904	AVE5CB08	This is to output images in 0.8 (GT:A) of density for Semi III (CB).	Auto V (Dmin = 0.6) using the Type II S_2 in the Auto Mode.
	1	5905	AVE5LB08	This is to output images in 0.8 (GT:A) of density for Semi III (LB).	Auto V (Dmin = 1.2) using the Type II S_2 in the Auto Mode.
	1	5906	AVE5LM08	This is to output images in 0.8 (GT:A) of density for Semi III (LM).	Auto V (Dmin = 1.4) using the Type II S_2 in the Auto Mode.
	1	5907	AVE5LT08	This is to output images in 0.8 (GT:A) of density for Semi III (LT).	Auto V (Dmin = 1.6) using the Type II S_2 in the Auto Mode.
	1	5908	AVE5CM08	This is to output images in 0.8 (GT:A) of density for Semi III (CM).	Auto V (Dmin = 0.8) using the Type II S_2 in the Auto Mode.
	1	6900	AVE5CT12	This is to output images in 1.2 (GT:A) of density for Semi III (CT).	Auto IV (Dmin = 1.8) using the Type II S_2 in the Auto Mode.
	1	6901	AVE5RT12	This is to output images in 1.2 (GT:A) of density for Semi III (RT).	Auto IV (Dmax = 1.2) using the Type II S_1 in the Auto Mode.
	1	6902	AVE5RM12	This is to output images in 1.2 (GT:A) of density for Semi III (RM).	Auto IV (Dmax = 1.0) using the Type II S_1 in the Auto Mode.
	1	6903	AVE5RB12	This is to output images in 1.2 (GT:A) of density for Semi III (RB).	Auto IV (Dmax = 0.8) using the Type II S_1 in the Auto Mode.
	1	6904	AVE5CB12	This is to output images in 1.2 (GT:A) of density for Semi III (CB).	Auto IV (Dmax = 1.4) using the Type II S_1 in the Auto Mode.
	1	6905	AVE5LB12	This is to output images in 1.2 (GT:A) of density for Semi III (LB).	Auto IV (Dmax = 2.0) using the Type II S_1 in the Auto Mode.
	1	6906	AVE5LM12	This is to output images in 1.2 (GT:A) of density for Semi III (LM).	Auto IV (Dmax = 2.2) using the Type II S_1 in the Auto Mode.
	1	6907	AVE5LT12	This is to output images in 1.2 (GT:A) of density for Semi III (LT).	Auto IV (Dmax = 1.0) using the Type II S_1 in the Auto Mode.
	1	6908	AVE5CM12	This is to output images in 1.2 (GT:A) of density for Semi III (CM).	Auto IV (Dmax = 1.6) using the Type II S_1 in the Auto Mode.
	1	7900	AVE5CT16	This is to output images in 1.6 (GT:A) of density for Semi III (CT).	Auto IV (Dmax = 1.8) using the Type I S_1 in the Auto Mode.
	1	7901	AVE5RT16	This is to output images in 1.6 (GT:A) of density for Semi III (RT).	Auto IV (Dmax = 1.2) using the Type I S_1 in the Auto Mode.
	1	7902	AVE5RM16	This is to output images in 1.6 (GT:A) of density for Semi III (RM).	Auto IV (Dmax = 1.0) using the Type I S_1 in the Auto Mode.

EDR mode						Display Parameter																			
Auto		Semi		Fix	Preset	Two-image Display																			
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
-	V	III(RB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	V	III(CB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	V	III(LB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	V	III(LM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	V	III(LT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	V	III(CM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(CT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(RT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(RM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(RB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(CB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(LB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(LM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(LT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(CM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(CT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(RT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(RM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Test 3]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
	1	7903	AVE5RB16	This is to output images in 1.6 (GT:A) of density for Semi III (RB).	Auto IV (Dmax = 0.8) using the Type I S_1 in the Auto Mode.
	1	7904	AVE5CB16	This is to output images in 1.6 (GT:A) of density for Semi III (CB).	Auto IV (Dmax = 1.4) using the Type I S_1 in the Auto Mode.
	1	7905	AVE5LB16	This is to output images in 1.6 (GT:A) of density for Semi III (LB).	Auto IV (Dmax = 2.0) using the Type I S_1 in the Auto Mode.
	1	7906	AVE5LM16	This is to output images in 1.6 (GT:A) of density for Semi III (LM).	Auto IV (Dmax = 2.2) using the Type I S_1 in the Auto Mode.
	1	7907	AVE5LT16	This is to output images in 1.6 (GT:A) of density for Semi III (LT).	Auto IV (Dmax = 2.4) using the Type I S_1 in the Auto Mode.
	1	7908	AVE5CM16	This is to output images in 1.6 (GT:A) of density for Semi III (CM).	Auto IV (Dmax = 1.8) using the Type I S_1 in the Auto Mode.

EDR mode						Display Parameter																		
Auto		Semi		Fix	Preset	Two-image Display																		
						Left Image							Right Image							One-image Display						
PRIEF	Type	Type	Lfix	Sfix	mode	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE	GA	GT	GC	GS	RN	RT	RE
-	IV	III(RB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(CB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(LB)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(LM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(LT)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0
-	IV	III(CM)	2.0	200	S	1.0	E	1.6	-0.2	4	R	1.0	1.0	E	1.6	0.0	4	R	1.0	1.0	E	1.6	-0.2	4	R	1.0

Gradation Processing: Rotation Amount (GA), Gradation Type (GT), Rotation Center (GC), Gradation Shifting Amount (GS)
Frequency Processing: Frequency Rank (RN), Frequency Type (RT), Frequency Enhancement (RE)

[Dynamic Range Control Processing/Tomographic Artifacts Suppression Processing]

Technique	Level	Menu Code	Menu (PA) : Right-to-left reversed output	Applicable projection method and observation site	Remarks
Plain	1	0200	CHEST, GENREAL (PA)	Plain thoracic exposure; observation of the lung field and mediastinum for shadows	
Tomog-raphy	1	2200	LUNG : T (PA)	Mainly tomography of the lung field; observation of the lung field and rib	
Magnifi-cation	1	0300	BREAST (PA)	Observation of the whole breast Available for other exposures including spot exposure	Use the Mo bulb.

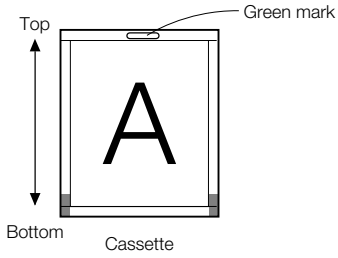
EDR mode						Display Parameter																	
Auto		Semi		Fix	Preset	Two-image Display																	
						Left Image						Right Image						One-image Display					
PRIEF	Type	Type	Lfix	Sfix	mode	DRN	DRT	DRE	ORN	ORT	ORE	DRN	DRT	DRE	ORN	ORT	ORE	DRN	DRT	DRE	ORN	ORT	ORE
4S	II	IV	2.2	200	A	2	B	0.6	5	1	0.0	2	B	0.0	5	1	0.0	2	B	0.6	5	1	0.0
1	II	IV	2.2	200	A	5	A	0.0	4	0	3.0	5	A	0.0	4	0	0.0	5	A	0.0	4	0	3.0
2	I	I	1.8	40	A	8	E	1.0	5	1	0.0	8	E	0.0	5	1	0.0	8	E	1.0	5	1	0.0

DRC Processing rank (DRN)
Processing type (DRT)
Processing degree of enhancement (DRE)
TAS Processing rank (ORN)
Processing type (ORT)
Processing degree of enhancement (ORE)

Appendix **Z**

Precautions for Exposure

It is recommended to use Bucky's device to remove scatter lines and obtain a high quality image. When carrying out exposure using a stationary grid, it is recommended to use a 60 grids/cm grid with fewer artifacts. However, it is also possible to use 80 grids/cm for 8 x 10" IP.



1 Precautions for Exposure in the AUTO MODE

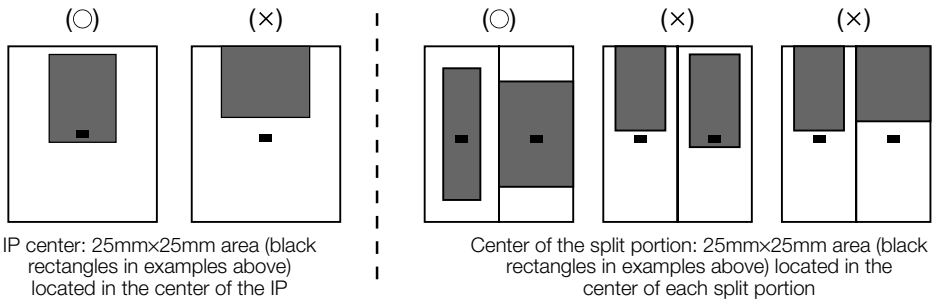
In the AUTO MODE, stable image output can be obtained by means of the following.

(1) Radiation field and IP split pattern recognition (PRIEF)
(2) Detailed depiction of the cervical region
(3) EDR image data analysis

However, problems may arise due to differences in multiple diaphragm or scattered rays of the X-ray equipment. For such problems, contact our service engineer and use such other recording modes as the SEMI-AUTO MODE or FIX MODE.

1.1 Radiation Field and IP Split Pattern Recognition

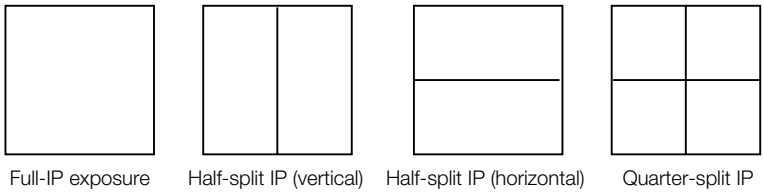
1 Be sure that the center (25 × 25mm) of the IP is in the radiation field. If the IP is split for multiple exposures, each center of the split portions must be covered by the radiation field.


(○)
(×)
(○)
(×)
(×)
IP center: 25mm×25mm area (black rectangles in examples above) located in the center of the IP
Center of the split portion: 25mm×25mm area (black rectangles in examples above) located in the center of each split portion

2 Do not set the radiation field extremely small. Be sure to expose X-rays on one thirds or more of the length of each side of the IP.

3 Be sure that each side of the radiation field does not overlap with the contrast medium. Error will occur if they overlap each other.

4 The IP split pattern recognition is as follows. "S" in PRIEF4S or 1S is a mark showing that the IP split recognition is possible.



* For multiple exposures with a split IP, split portion(s) can be left unexposed. (Only when using PRIEF 4S or 1S.)

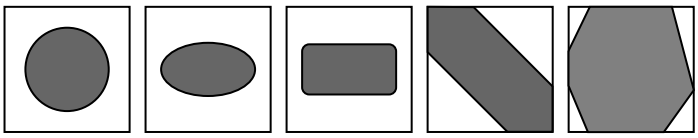
[Table. Z-1] Available for Each Anatomical Region/Method

	Plain	Contrast Medium	Tomography
Head	4S	4S	4S (1 for pantomography)
Neck	4S	4S	1S
Chest	4S	4S (1 for esophagus)	1
Breast	2	2	–
Abdobem	4S	4S (1S for stomach and intestines)	1
Pelvis	4S	4S	1
Upper extremity	4S	4S	1
Lower extremity	4S	4S	1

5 Notes on PRIEF

[PRIEF 4S] Used, with some exceptions, for both plain and contrast medium exposure menus, from head to lower extremities.

(1) The diaphragm shape will be any convex polygons including rectangle, circle, ellipse, track, etc.



[PRIEF 2] Used to the mammography menu.

(1) Use "Breat-Chest Wall" in mammography for very small breast such as male breast.

[PRIEF 1] Used to the mammography menu.

(1) When the IP is not split and the diaphragm is closed, adjust the shape so that it is parallel to the IP side.

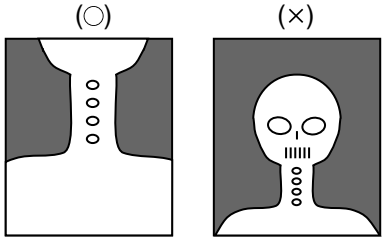
(2) When conducting multiple exposures with a split IP using the PRIEF 1 menu,
1) do not close the diaphragm.
2) expose all the split portions of the IP.

[PRIEF 2] Used to neck tomography and stomach contrast medium menus.

(1) When the IP is not split and the diaphragm is closed, adjust the shape so that it is parallel to the IP side.

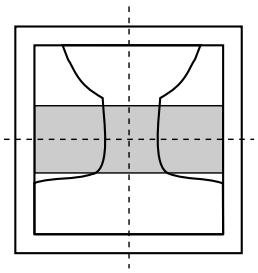
1.2 Depiction of the Cervical Region

1 The radiation field must not include the whole head. Be sure to secure transparent portions on both sides of the neck.

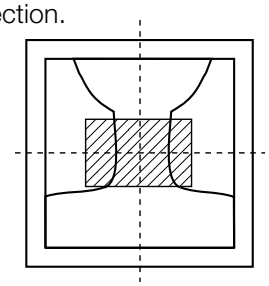


Use the “Skull, General” menu to include the whole head in the radiation field.

2 For exposure of the pharynx and/or larynx, be sure that the neck comes to the center of the radiation field, especially in terms of upper and lower margins.



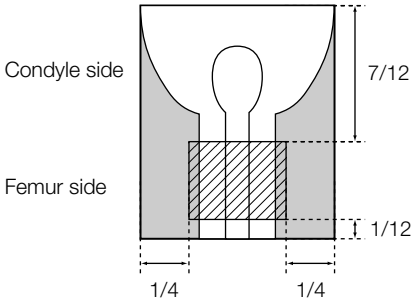
3 In pharynx and/or larynx exposure, do not use lead characters in the oblique line section.



1.3 Depiction of HIP JOINT AXL - 2

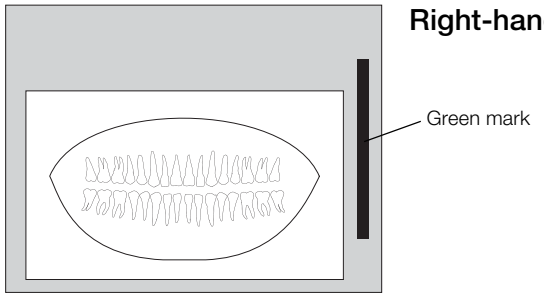
1 Make sure to position the region of interest to the slanted-line area shown below. Do not collimate further inside.

2 Positioning should be done so that the condyle and the femur run along the longer edge. (Do not have them positioned against the shorter edge.)



1.4 Precautions for "Panorama" X-ray Exposures

1 To obtain properly displayed images, set the 10"x12" cassette in the dedicated cassette holder of the exposure unit so that the green mark on top of the cassette is positioned on the right-hand side when viewed from the X-ray tube, as illustrated below.



10″×12″ cassette

2 For image output, the "Panorama" X-ray exposure menu (M2004) takes only an area of 15×30cm from the 10″×12″ exposure area.
If you wish an image be output using the entire 10″×12″ area, use the "Panorama-2" (7004) exposure menu.

1.5 EDR Image Data Analysis

1 Image unevenness appearing when the grid used for exposure is not correctly positioned in terms of the bulb, clothes shadow or unevenly radiated X-ray to the X-ray exposure area can be referred to as the problems occurring during the EDR image data analysis, which cause unstable density on the image. Avoid such unevenness in the X-ray exposure area as far as possible.

2 If the target includes such materials as gypsum, denture, etc., stable density may not be obtained because such materials make it difficult to analyze EDR image data. In such a case, use the S-Shift/C-Shift or FIX MODE.

3 For multiple exposures with a split IP, make exposure doses on each portion of the IP as equal as possible (maximum 1.6 times). In other words, for multiple exposures, submit each portion of the IP to the appropriate exposure dose according to the intended anatomical region as usual.

4 Precautions when using the AUTO MODE.

Auto mode	Precautions
I	As this mode is available on the assumption that it extracts information concerning the skin, secure the positioning so that there is an area other than the target where the direct X-rays are incident.
II	No special precautions
III	Be sure to use the Ba contrast medium.
IV	1 Be sure to secure the positioning so that the X-rays are incident directly in the area outside the target. 2 As the reading latitude is fixed, it is necessary to control the tube voltage as usual according to the thickness of the target.
V	As the reading latitude is fixed, it is necessary to control the tube voltage as usual according to the thickness of the target.
VI	No special precautions
VII	No special precautions

2 Precautions for Exposure in the SEMI-AUTO MODE

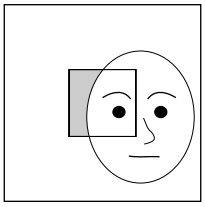
The precautions are common to Semi I, II, III or III(**).

1 Center area of the IP 10 × 10cm (Semi I)
7 × 7cm (Semi II)
5 × 5cm (Semi III)

Position the portion you need to display often in each of the 5 × 5cm center areas of the half-split IPs (both upper and lower halves and right and left halves) and the quarter-split IP.

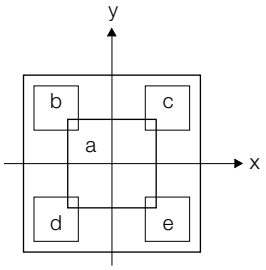
2 Never position anything other than the subject in the above mentioned areas. If anything other than the subject is positioned in such areas, the image density will become thinner.

In addition, do not position any metals or artificial bones in such areas. The image density will become higher if such an object is positioned in such areas.



(×)

3 It is necessary to control the tube voltage as usual according to the subject thickness. The following precautions should be observed for Semi IV.



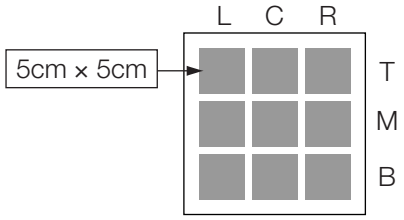
Area	Center Coordinate (x:y) cm	Size (cm)
a	(0, 0)	10×10
b	(-5, 7)	6×6
c	(5, 7)	6×6
d	(-5, -7)	6×6
e	(5, -7)	6×6

(1) Do not position transparent portions (area other than the subject) in the abovementioned five areas.
(2) It is necessary to control the tube voltage as usual according to the subject thickness.

The SEMI-AUTO MODE has been preset around the magnification menu. For details, refer to Appendix Y Exposed Anatomical Regions / Applicable Menus / Display Parameter.

3 Precautions for Exposure in SEMI-X MODE

The user will select the nine areas accordingly, on which SEMI-AUTO MODE applies.
(See the illustration below.)
The same precautions as for SEMI-AUTO MODE apply.



4 Precautions for Exposure in FIX MODE

As reading conditions are fixed, exposure conditions must be controlled in the same way as for conventional X-ray exposure.
The reading conditions (sensitivity and latitude) have been preset according to the relevant menu in FIX MODE. Thus, select the exposure conditions that correspond to that menu.

During maintenance and inspection, strictly observe precautions contained in **"1.2 Operational Precautions" (page 1-3)** and **"1.3 Safety Precautions" (page 1-7)** in this manual for you to use the FCR XG-1 system under best conditions.

1 User's Maintenance and Inspection Items

1.1 Daily Inspection

(1) Inspection Before Use

- Make sure that the equipment starts up normally.
- Make sure that the equipment communicates with connected devices normally.
  ➡ **"2.1.1 Starting Up and Shut Down the System" (page 2-2)**

(2) Inspection During Use

- Make sure that the equipment handles cassettes normally.
  ➡ **"2.2 Routine Operations" (page 2-8)**
- Make sure that the cassette opens / closes and locks normally.
- Make sure that images are output normally.
  If any failures, such as transparent image, etc., result, clean the equipment.
  ➡ **"2.3 Cleaning" (page B-3)**

(3) Inspection After Use

- Make sure that the power turns OFF normally after the equipment has been shut down.
  ➡ **"2.1.1 Starting Up and Shut Down the System" (page 2-2)**

1.2 Periodical Inspection

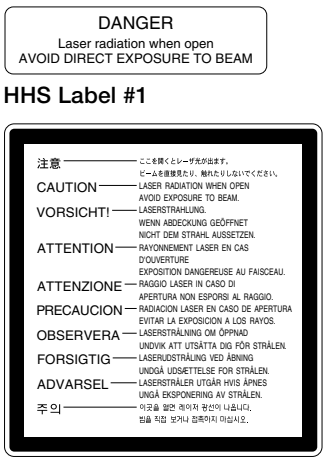
Using a vacuum cleaner, remove any dirt or dust accumulated in each unit of the equipment once every three months. Clean then with a slightly moistened soft cloth and wipe off any moisture with a dry cloth.

➡ **Figure 1.1 in "1.4 Hardware Configuration" (page 1-8)**

No.	Unit for Cleaning	No.	Unit for Cleaning	No.	Unit for Cleaning
1	Main unit cover	3	Cassette inserting unit	5	Periphery of devices
2	Operation panel	4	Air filter	6	CR Console monitor

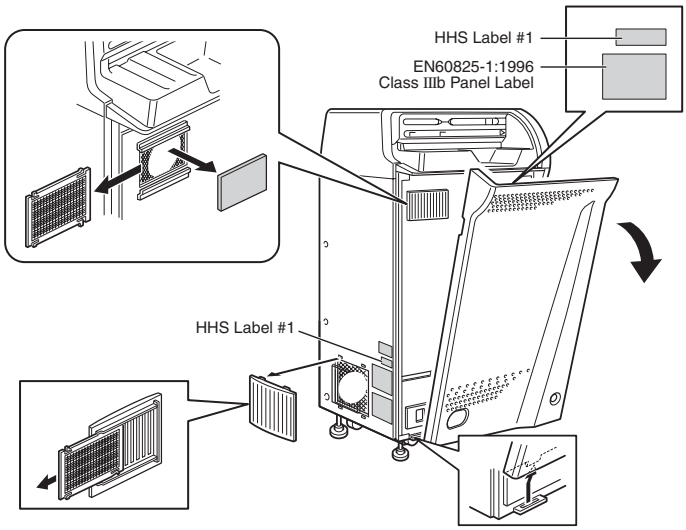
The air filter on the left side of the device can be removed as an assembly, together with the filter cover. Remove first the cover and then the air filter (plastic) fit in the cover. Clean them using a vacuum cleaner.

For the air filter inside the front panel, first remove the front panel.
The air filter inside the front panel can be removed as an assembly, together with the filter cover. Remove the cover and then air filter (sponge) fit in the cover. Clean them using a vacuum cleaner.



HHS Label #1

EN60825-1:1996
Class IIIb Panel Label



!! Be sure to turn the equipment power OFF before cleaning the filter.

2 Maintenance and Inspection Items Assigned to Specified Dealer

For periodical inspection of the equipment and necessary arrangements, consult our official dealer, Fujifilm Medical Systems representatives of each region.

CE

European Authorized Representative :
FUJI PHOTO FILM (Europe) GmbH
Heesenstrasse 31, D-40549 Düseldorf Germany

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419 WEST AVENUE, STAMFORD CT 06902, U.S.A.